NTS

DreamWriter 325™

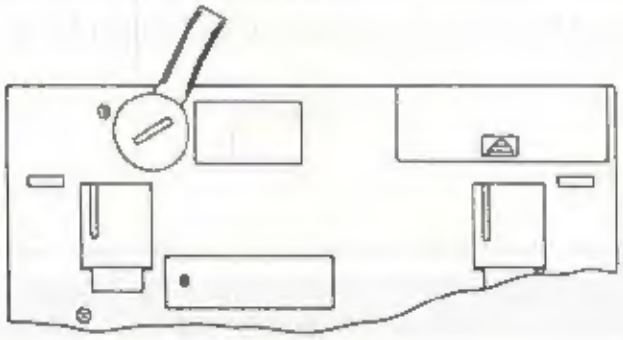
Instruction Manual

PREPARATION

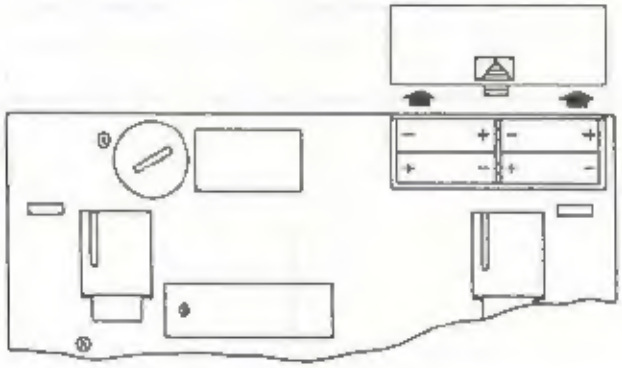
Unpacking

Before using your Notebook, please remove the following packing materials.

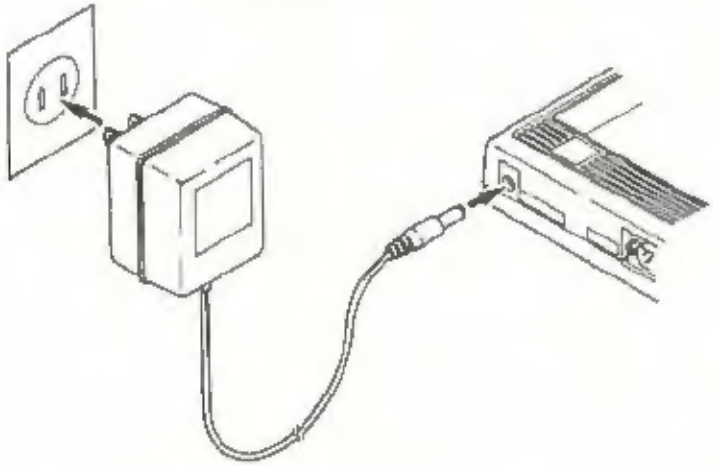
1. Remove the paper tab from underneath the lithium battery cover located on the bottom of the Notebook.



2. Open the Notebook's battery cover and install four dry cells.



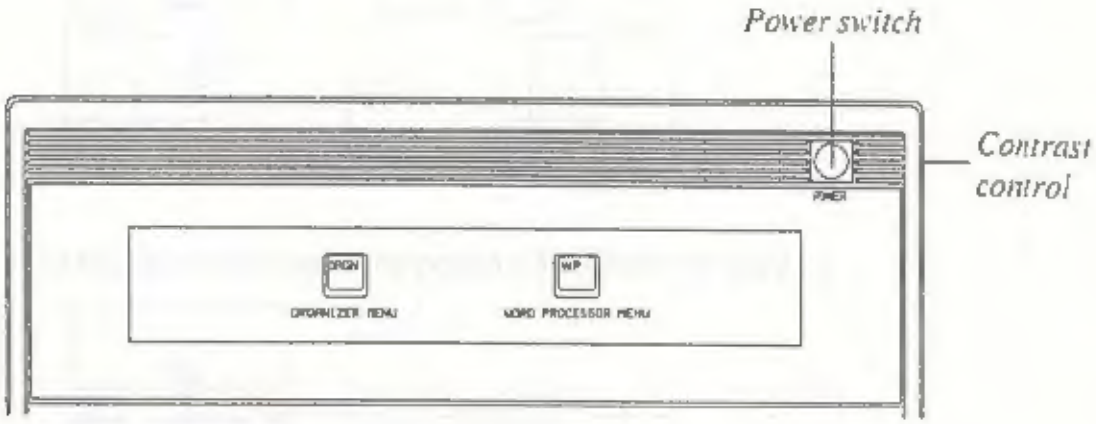
If you prefer to use the Notebook with the AC power adapter, plug the adapter into the Notebook, then plug the other end into a wall outlet.



Power switch

Contrast controlPower On:

Push the power switch located at the Notebook's upper right corner. The Notebook beeps, then characters appear on the Notebook's screen. (If you like, you can change the sound of the power-on beep, or turn it off altogether. See "Setting the Power-on buzzer" in the System Setup chapter for details.)



For USA only

Note: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING:

- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- Use a shielded interface cable.

INTRODUCTION

Your new Notebook computer increases your typing efficiency through use of the most advanced technology. Some of the many outstanding features are:

- Display: 8 lines of 80 characters each
- WYSIWYG (What You See Is What You Get) screen
- Standard typewriter keyboard layout
- User-friendly guidance messages
- Three character pitch on the display: 10, 12 or PS
- 64 files, 62,000 characters built-in store memory
- Optional card memory
- Spell check
- Grammar check
- Thesaurus
- Delete character/word/line
- Insert character/line
- Copy block text
- Move block text
- Delete block text
- Search and replace
- Reformat text
- Justify text
- Undelete block text
- Zoom image
- Print page/file
- Add page numbers when printing
- Underlining
- Boldfacing
- Line drawing (framing)
- Mail Merge

System Setup

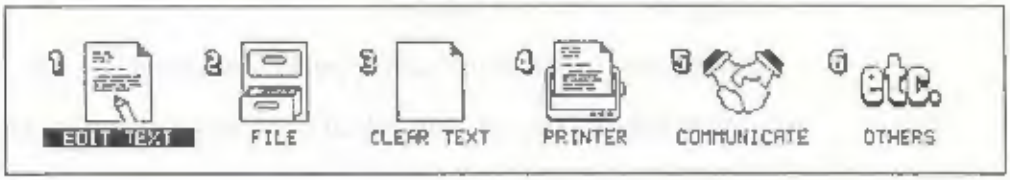
This chapter explains how to set the auto power-off time and the power-on buzzer, and how to set and change a password.

Setting the auto power-off time:

To prevent excess battery depletion, the Notebook's power shuts off automatically after a certain period of time passes without any keyboard activity. The power-off time is preset to 2 minutes at the factory. However, you can change the setting to a longer period (3, 5, 10, 15, or 20 minutes). You can also disable the auto power-off function completely.

Note: You do not need to worry about losing any work in the event that the power shuts off. The Notebook's auto-resume function saves your text and restores the screen to the state it was in at the time the power shut off.

1. Press the [WP] key, and the Word Processor menu appears.



2. Press the [6] key.
   or
   Using the [→] key, move the dark bar to OTHERS and press [↵]. The OTHERS menu appears as shown below.

3. Press the [1] key.
   or
   Using the [←] key, move the dark bar to SYSTEM and press [↵] . The SYSTEM SET UP menu appears.

```
SYSTEM SET UP
    AUTO POWER OFF PERIOD   : 2  3  5  10  15  20  UNLIMITED
                              (minutes)
    POWER ON BUZZER         : TYPE 1  TYPE 2  TYPE 3  NO
                              (Press SPACE to hear the sound)
```

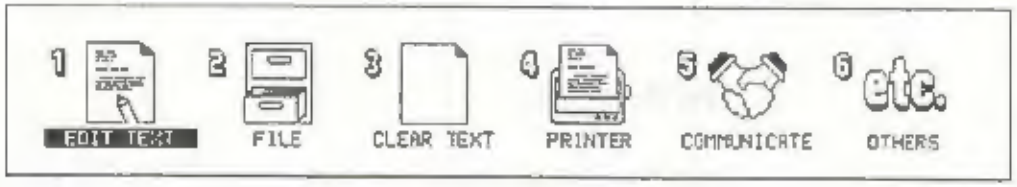
4. Using the [←] and [→] keys, move the dark bar to the desired power off period, then press [↵] . Setting UNLIMITED disables the auto power-off function. With auto power-off disabled, the power stays on until you turn it off.

5. To return to the OTHER menu, press [CAN] . Then press [WP] to return to the WORD PROCESSOR menu.

Setting the power-on buzzer:

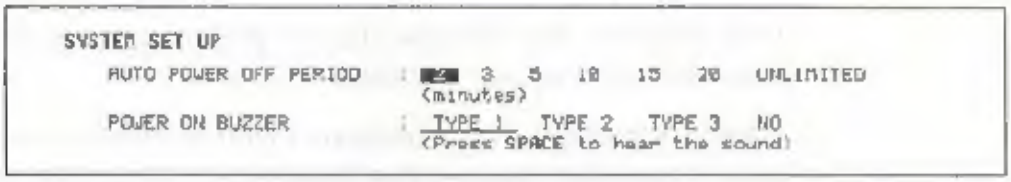
You can change the sound of the power-on buzzer, or turn the buzzer off.

1. Press the [WP] key, and the Word Processor menu appears.



2. Press the [6] key.
   or
   Using the [→] key, move the dark bar (the dark bar on top of EDIT TEXT in the screen above) to OTHERS and press [↵] . The OTHERS menu appears as shown below.

3. Press the [1] key.
   or
   Using the [←] key, move the dark bar to SYSTEM and press [↵] . The SYSTEM SET UP menu appears.



4. Press the [↓] key to move the dark bar to the POWER ON BUZZER field. Then select the desired power-on buzzer setting by using the [←] and [→] keys, then press [↵] .

   Setting 'No' disables the power-on buzzer.

5. To return to the OTHER menu, press [CAN] .

   Then press [WP] to return to the WORD PROCESSOR menu.

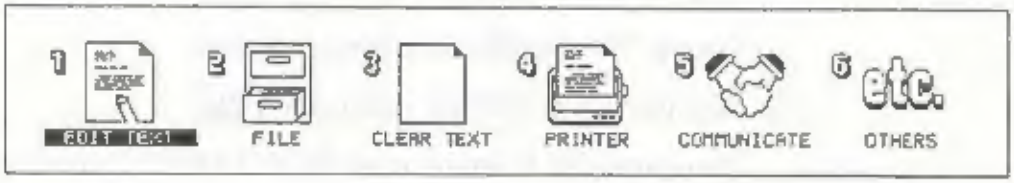
Setting and Changing the Password

Setting a password:

By setting a password, you can prevent other people from gaining access to files, schedules, and addresses that you prepare using the Notebook's word processor and organizer functions.

Note: While files in the Notebook's built-in memory can be protected by password, password protection cannot be applied to files in card memory (regardless of whether you store the file in card memory or copy them to card memory from the Notebook's built-in memory).

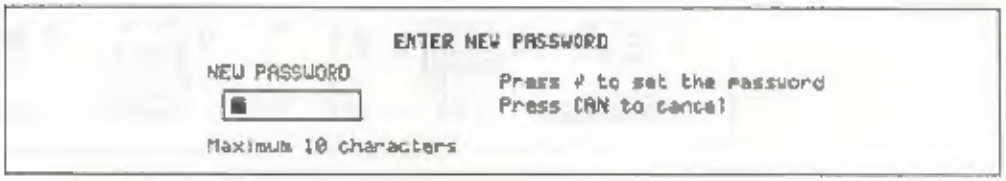
1. Press the [WP] key, and the Word Processor menu appears.



2. Press the [6] key.
   or
   Using the [→] key, move the dark bar (the dark bar on top of EDIT TEXT in the screen above) to OTHERS and press [↵]. The OTHERS menu appears as shown below.

3. Press the [2] key.
   or
   Using the [←] and [→] keys, move the dark bar to SECRET and press [↵].

   The ENTER NEW PASSWORD menu appears.



4. Enter a password. Including spaces, you can enter up up to 10 characters.

   If you make a mistake while typing the password, you can correct it using either [BACK] or [ALT] + [BACK]. To insert one or more characters, move the cursor to the point of insertion, then press [INS] and type the character(s).

5. To return to the OTHER menu, press [CAN]. Then press [WP] to return to the WORD PROCESSOR menu.

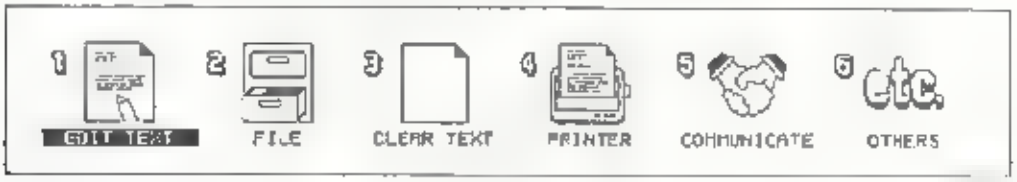
6. Press [↵]. Now the following screen appears to allow you to confirm the password.

   After confirming the password, press [↵] again. The password is set and display returns to the OTHERS menu.

Changing the password:

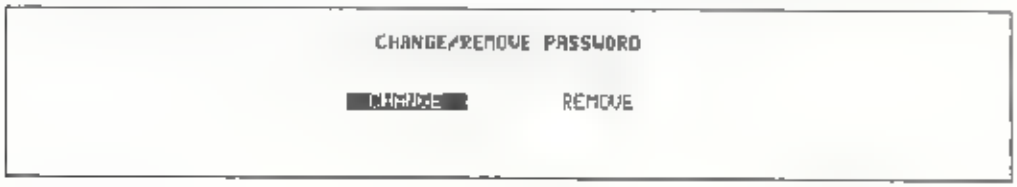
Use the following procedure whenever you want to change the password.

1. Press the [WP] key, and the Word Processor menu appears.



2. Press the [6] key.
   or
   Using the [→] key, move the dark bar (the dark bar on top of EDIT TEXT in the screen above) to OTHERS and press [↵]. The OTHERS menu appears as shown below.

3. Press the [2] key.
   or
   Using the [←] and [→] keys, move the dark bar to SECRET and press [↵].
   The CHANGE/REMOVE PASSWORD menu appears.



4 If the dark bar is on CHANGE, press ↵. If it is on REMOVE, move it to CHANGE with the ← key, then press ↵.

Make sure that the dark bar is on CHANGE (if necessary, move it from REMOVE to CHANGE with the ← key). Then press ↵.

The CHANGE PASSWORD menu appears.

5 Enter the current password. As you type, characters appear in the OLD PASSWORD box.

6 Press ↵. The CHANGE PASSWORD screen changes as follows.

7 Type the new password. Including spaces, you can enter up to 10 characters.

If you make a mistake while typing the password, you can correct it using either BACK or ALT + BACK. To insert one or more characters, move the cursor to the point of insertion, then press INS and type the character(s).

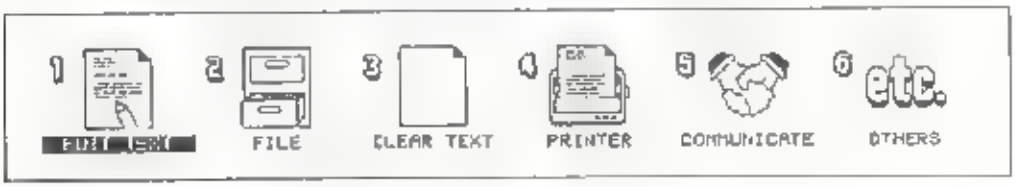
8 Press ↵. The following screen appears to allow you to confirm the password.

After confirming the password, press ↵ again. The password is set and display returns to the OTHERS menu.

Removing a password:

Use the following procedure if you want to remove the password.

1. Press the [WP] key, and the Word Processor menu appears.



2. Press the [6] key
   or
   Using the [→] key, move the dark bar (the dark bar on top of EDIT TEXT in the screen above) to OTHERS and press [↵]. The OTHERS menu appears as shown below.

3. Press the [2] key.
   or
   Using the [←] and [→] keys, move the dark bar to SECRET and press [↵]

   The CHANGE/REMOVE PASSWORD menu appears.

4 Using the [→] key, move the dark bar to REMOVE, then press [↵]

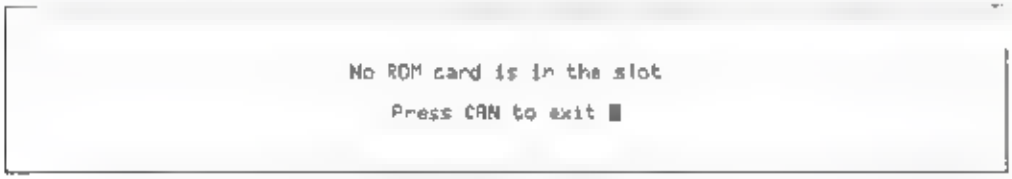
The REMOVE PASSWORD menu appears

5 Enter the current password. As you type, characters appear in the OLD PASSWORD box.

6 Press [↵]. The password is cleared and display automatically returns to the OTHERS menu.

ROM card

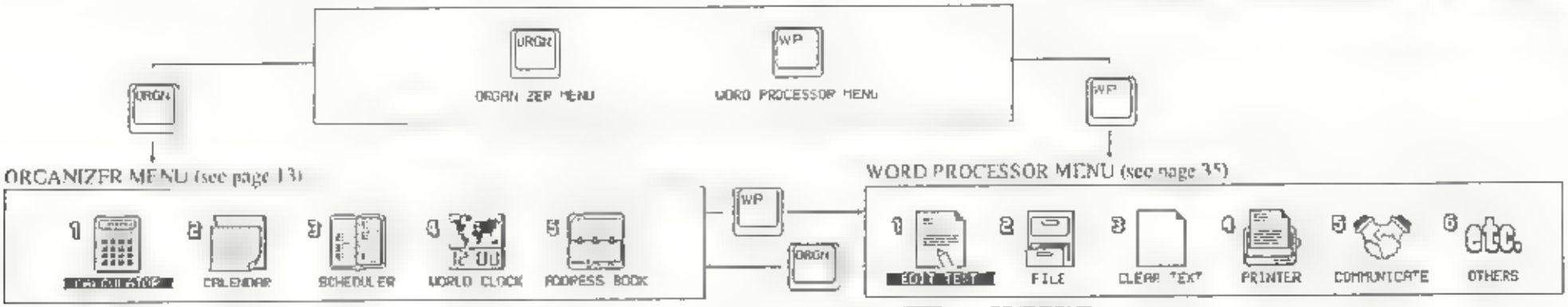
This function is provided to allow application programs such as spreadsheets and games to be run on the Notebook. Ordinarily, the screen appears as shown below.



GETTING STARTED

When the power is turned on for the first time, a copyright notice appears momentarily, followed by the screen shown below. This screen is for selecting between the Notebook's ORGANIZER and WORD PROCESSOR menus.

When you press the ORGN key, the ORGANIZER menu appears, allowing you to use the Organizer functions such as the calculator, world clock, and address book. If you press the WP key, the WORD PROCESSOR menu appears, allowing you to type and print documents. You can switch between the two menus at any time simply by pressing the ORGN or WP key.



1 **CALCULATOR**
Lets you use the Notebook as a calculator.

2 **CALENDAR**
Displays a calendar.

3 **SCHEDULER**
Lets you create and maintain a personal schedule.

4 **WORLD CLOCK**
Displays the time in different parts of the world.

5 **ADDRESS BOOK**
Lets you create and maintain a list of addresses or telephone numbers.

1 **EDIT TEXT**
Used for inputting and editing text.

2 **FILE**
Used for storing documents in internal memory or in a card memory. Documents saved can be recalled for editing or copied.

3 **CLEAR TEXT**
Clears the document from the screen.

4 **PRINTER**
Prints a document on a connected printer.

5 **COMMUNICATE**
Allows you to send documents to other computers, or to receive documents prepared on other computers.

6 **OTHERS**
Used for setting up the system, setting or changing the password, spell-checking documents, and accessing ROM card functions.

ORGANIZER MENU

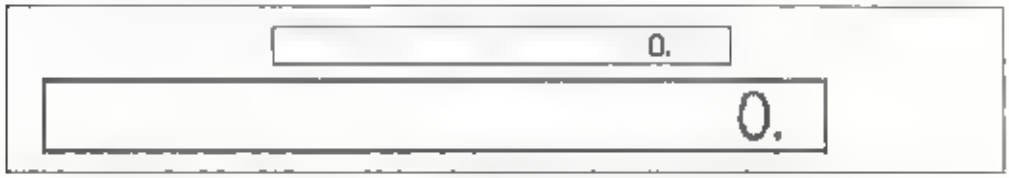
Calculator Function

The calculator function provides addition, subtraction, multiplication, and division using a 14-digit calculator display. Further, it allows you to find square roots, calculate percentages, manipulate values in memory, and do calculations with constants.

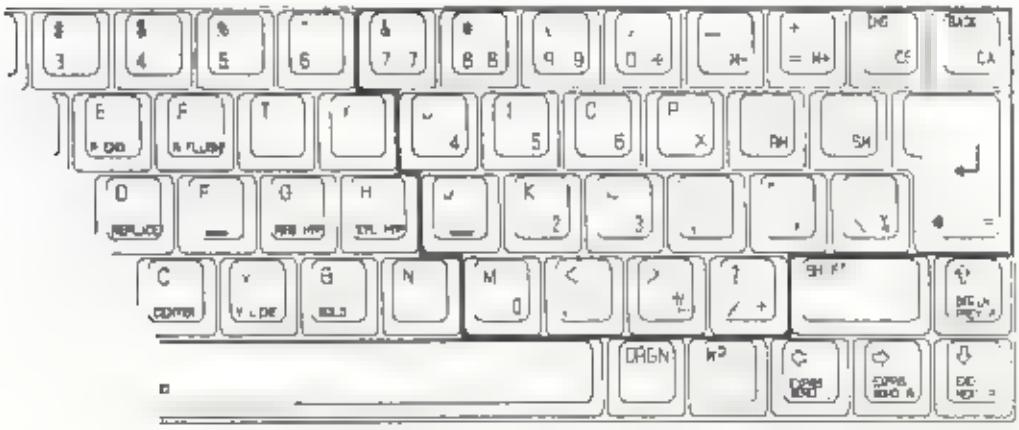
To use the calculator:

1. Press the [ORGN] key to display the ORGANIZER menu.

2. Press the [1] key.
   or
   Using the [←] key, move the dark bar to CALCULATOR and press [↵].
   The calculator screen then appears.



3. The keys to use with the calculator function are the ones on the right side of the keyboard that are marked with characters in blue. For ordinary calculations, input and results are displayed in the large box in the display. The small box in the display is for doing calculations in memory.



Keys used with the calculator function are as follows:

[0] - [9]	To input numbers.
[.]	To input the decimal point.
[+/-]	To change the sign of a value
[+]	To input the operator for addition
[−]	To input the operator for subtraction
[×]	To input the operator for multiplication.
[÷]	To input the operator for division.
[√]	To find the square root of a value.
[%]	To calculate a percentage.
[M+]	To add a result to memory.
[M-]	To substruct the result from memory.
[SM]	To store a value in memory.
[RM]	To recall a value from memory
[=]	To complete a calculation and display the result.
[CE]	To clear the value of the last entry
[CA]	To clear all values and statuses of a calculation (including any error).

4 To return to the ORGANIZER menu, press [CAN] or [ORGN].

Calculation examples:

Calculation	Example	Operation	Display
Arithmetic	(5+4)×6=	[5] [+] [4] [×] [6] [=]	54
	20/(−5)=	[2] [0] [÷] [5] [+/-] [=]	−4
Exponentiation	3^4	[3] [×] [=] [=] [=]	81
Square root	$\sqrt{16+9}$=	[1] [6] [+] [9] [=] [√]	5
Percent	What is 10% of 150?	[1] [5] [0] [×] [1] [0] [%]	15
	What percentage is 10 of 40?	[1] [0] [÷] [4] [0] [%]	25

Calculation	Example	Operation	Display
Add-on	What is the result of a 15% increase from 200?	2 0 0 + 1 5 %	230
Discount	What is 600 after a 40% discount?	6 0 0 − 4 0 %	360
Constant	30 + 15 − 62 + 15	3 0 + 1 5 = 6 2 =	45 77
	82 − 46 = 70 − 46 =	8 2 − 4 6 = 7 0 =	36 24
	32 × 35 = 32 × 59 =	3 2 × 3 5 = 5 9 =	1,120 1,888
	54 ÷ 12 = 99 ÷ 12 =	5 4 ÷ 1 2 = 9 9 =	4.5 8.25
Memory	110 × 25 145 × 30 = 120 × 16 = +, 250 × 22 = total ÷ 4 =	1 1 0 × 2 5 = M+ 1 4 5 × 3 0 = M+ 1 2 0 × 1 6 = M+ 2 5 0 × 2 2 = M+ RM + 4 =	2,750 4,350 1,920 5,500 3,630
	(4+9) × 3 − 10) =	4 + 9 = M+ 3 − 1 0 = × RM =	13 −7 91

Error messages

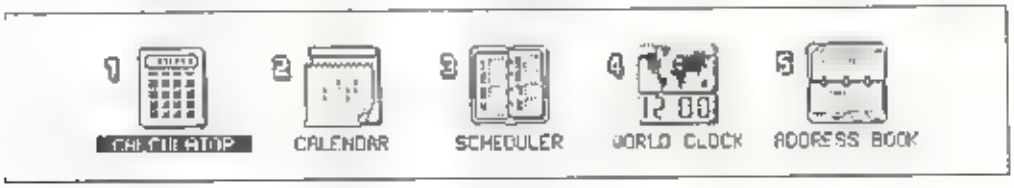
Error messages that can appear when using the calculator function are as follows. Display of an error message indicates that the calculation results are not valid, so press CA to clear the display and start over.

OVERFLOW	The integer portion of the result of a calculation exceeded 14 digits.
DIVISION BY ZERO	An attempt was made to divide a number by zero
OUT OF RANGE	An attempt was made to find the square root of a negative number.

Calendar Function

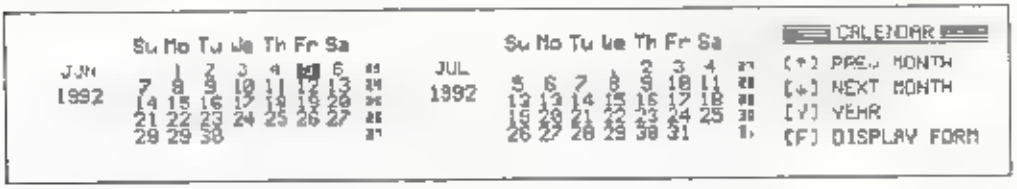
This function displays the calendar for two months Use the function as follows:

1. Press the [ORGN] key to display the ORGANIZER menu.



2. Press the [2] key.
   or
   Using the [↑] and [↓] keys, move the dark bar to CALENDAR and press [↵].

   The CALENDAR screen appears. The current month is displayed on the left, and the following month is displayed on the right The current date is shown as white characters on a black background The small numbers displayed to the right of each week indicated the number of weeks since the beginning of the year.



Note Note that the correct calendar will not appear unless the world clock is set with the correct date and time.

Pressing the [↑] key changes display backwards a month at a time Pressing the [↓] key changes the display forward a month at a time In either case, pressing and holding a key changes the month continuously

Instead of using the [↑] and [↓] keys, you can jump directly to the calendar for a specific year To do so, press the [Y] key a box appears for entering a year. Type in the year and press [↵], then the display jumps to the months in the specified year that are the same as the months previously appearing on the screen. This function is good for all months of the years from 1900 to 2099

You can also switch the format for display of weeks from the Sunday-through-Saturday format to the Monday-through-Sunday format. To do so, press the [F] key to display a display format select on window. Select the desired format by moving the dark bar with the [←] and [→] keys, then press [↵].

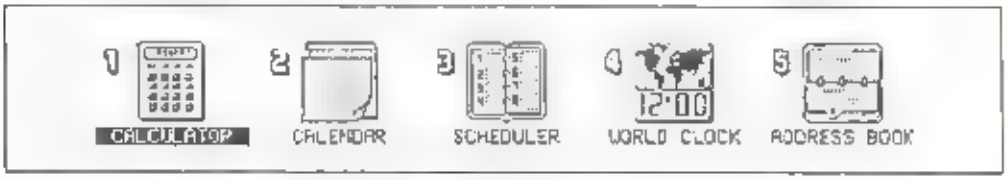
3. Press the [CAN] or [ORGN] key to return display to the ORGANIZER menu.

Scheduler Function

The scheduler function allows you to record up to 200 events. (The precise number varies according to the amount of available memory.)

Display the SCHEDULER screen as follows:

1. Press the [ORGN] key to display the ORGANIZER menu.

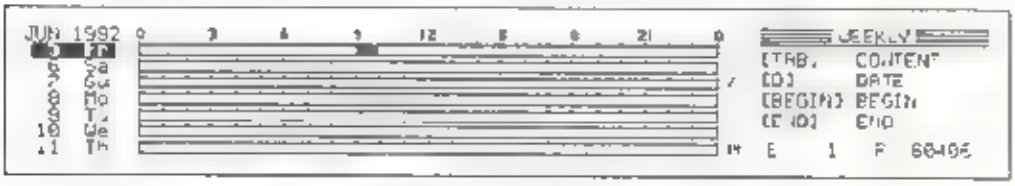


2. Press the [3] key.
   or
   Using the [←] and [→] keys, move the dark bar to SCHEDULER, then press [↵].

Note: If you have set a password, the password function interrupts at this point to request input of the password.

If the password entered at this po nt does not match the one set, you cannot use the scheduler function

Upon se ection, the scheduler displays a chart of events scheduled for the 7-day period beginning with the current day.

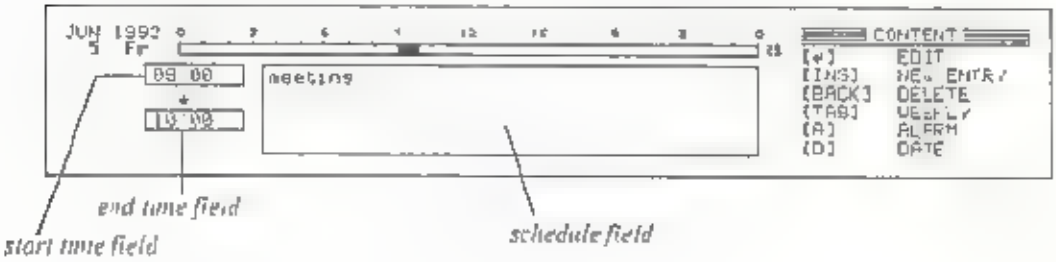


This weekly chart makes it possible to see the state of you schedule for that week at a g ance The hours for each day of the week are shown a horizontal bars, with tick marks indicat ng each hour of the day starting at m dn ght A black band in a bar indicates that you have scheduled an event for that part of the day.
(You cannot use this weekly chart to input schedule entries)

If the currently-displayed weekly schedule does not show the desired time span, you can scroll to earlier or later periods by press.ng the ↑ or ↓ keys.

Note: If you have selected the 12 hour system for display of times by the world clock function, 12-hour times are also shown on the schedule bars.

3 Pressing the TAB key switches display to a schedule contents screen, when you can input, modify, or delete schedule entries



The contents screen shows the schedule bar for a single day of the schedule at the top of the screen. You can make "schedule cards" by entering the starting time, ending time, and a description for an event in the three fields appearing below the schedule bar. You can prepare several schedule cards for each day.

To look at earlier or later schedule cards, press the [↑] or [↓] key. If you scroll backwards or forwards to a previous or following day's schedule card, date changes and the schedule bar changes to show the schedule for that day.

Pressing the [TAB] key returns display to the weekly chart.

4 To return to the ORGANIZER menu, press the [CAN] or [ORGN] key.

Input a new schedule:

1 In the contents screen, use the [↑] and [↓] keys to move to the date for which you want to schedule an event.

2 Press the [INS] key. A blank schedule card appears and the scheduler enters the new entry mode.

3. Input the starting and ending times of the event.

Enter the hour portion of the starting time to the left of the colon in the start time field as a 2-digit number. Then press the [→] key and enter the minute portion of the time.

Note: If you are using the 12-hour system with the world clock, enter the hour as a number from 1 to 12, then press [A] or [P] after entering the minute to indicate AM or PM. If you are using the 24-hour system with the world clock, input the hour as a number from 0 to 23 (e.g., 14 for 2 pm).

After entering the starting time, press the [↓] key to move the cursor to the end time field, then enter the ending time in the same manner. (When entering the starting or ending time, the minute portion is automatically set to 00 if you press [↓] after entering the hour.)

4 Move the cursor to the schedule memo field by pressing the [↓] key. Input any desired description of up to 200 characters (including spaces).

5 Once schedule input is completed, press the [↵] key. The scheduled event is indicated as a black band in the portion of the schedule bar that corresponds to the scheduled time.

Note: You can input schedules for any date from January 1, 1900 to December 31, 2099.

You can also use the scheduler to input events that do not have specific starting and ending times, such as birthdays and holidays. When the cursor moves to the start time field during schedule card creation, simply press [↓] to move it to the schedule memo field without entering either a starting or ending time. Then enter a description and press [↵]. Upon doing so, a black diamond ◆ appears to the left of the schedule bar to indicate that the day has one or more events without scheduled times.

Making changes in your schedule:

1. Display the contents screen, then use the [↑] and [↓] keys to display the schedule card that you want to change.

2. Press the [↵] key. The cursor appears in the start time field and the scheduler enters the edit mode.

3 Move the cursor using the [←], [→], [↑], and [↓] key and make any necessary corrections.

4. Press the [↵] key to set the changes.

Note: If you want to delete the starting time and ending time, move the cursor to the start time field and delete the two hour digits using [ALT] + [BACK] (DEL →). Then pressing [↵] deletes both the starting and ending times and replaces the black band corresponding in the schedule bar with a black diamond ◆ to the left of the bar.

Deleting a schedule:

1. In the contents screen, use the [↑] and [↓] keys to the schedule card that you want to delete
2. Press the [BACK] key. The message "Deletes this entry. Are you sure?" appears, asking for confirmation that the schedule card is to be deleted.
3. Pressing the [Y] key deletes the schedule card. Pressing the [N] or [CAN] key cancels deletion.

Taking a quick look at the schedule for a specific day:

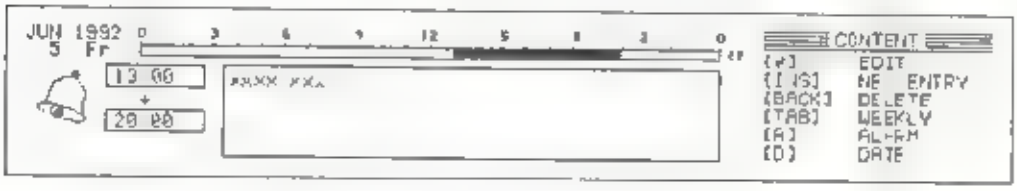
1. Display the weekly chart or contents screen, then press the [D] key. A window appears showing a date.

2. Use numeric characters to type in the date for the schedule that schedule you want to see.
3. Press [↵] to display the weekly chart that precedes the specified day or the contents screen for that day.

Setting an alarm in the schedule:

1 In the contents screen, display the schedule card for which you want to set an alarm.

2 Press the [A] key to set the alarm. The alarm mark appears to the left of the time fields, indicating that the alarm is set for the specified time on that date.



On the specified date, the alarm sounds at the specified time and the date, time, and schedule description are displayed at the top of the screen. This occurs regardless of whether the power is on.

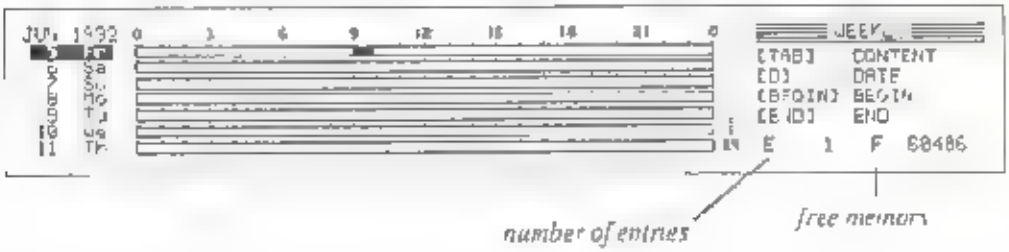
The alarm sounds for one minute. After one minute the alarm stops sounding and the alarm display is cleared from the screen. To stop the alarm before one minute, press the [CAN] key.

Saving an entered schedule:

When you make a schedule, it is automatically stored in a file called SCHEDULE.ODB in built-in memory. This file contains the individual entries of the schedule. If a password is set, this file automatically becomes a secret file.

The schedule file can contain a maximum of 200 entries. However, built-in memory is also used for storing document files. Therefore, the number of entries that the schedule file can hold may vary according to the amount of available built-in memory.

The number of entries stored in the schedule file and the amount of remaining built-in memory are displayed in the lower right corner of the weekly chart screen.

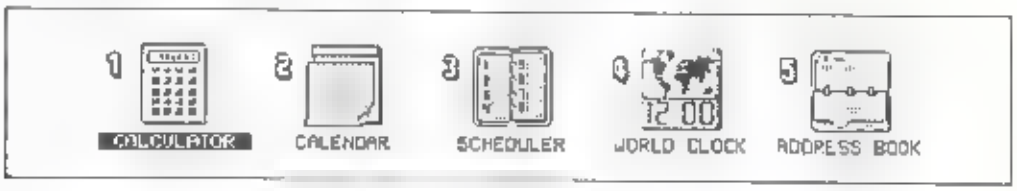


World Clock Function

The World Clock function simultaneously displays the time for two of among 222 cities around the world. You can also use this function to set a daily alarm

To display the world clock:

1. Press the [ORGN] key to display the ORGANIZER menu.



2. Press the [4] key.
   or
   Using the [←] or [→] key, move the dark bar to WORLD CLOCK and press [↵]. The world clock screen then appears.

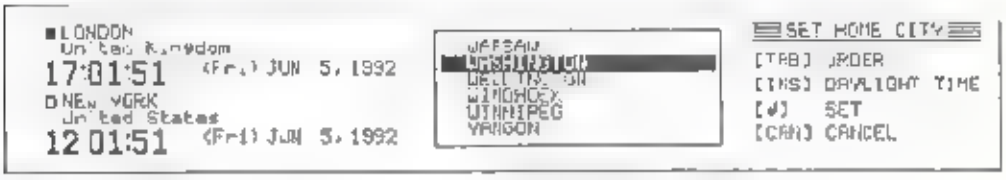
   The time and date for a selected home city are displayed at the top of the screen, and those for a 2nd city are displayed immediately underneath. (The initial home city is London, and the initial 2nd city is New York.)

   In the center of the screen, the location of the home city is displayed by a small solid black square ■ and that of the 2nd city is displayed by a hollow box □.

3. Press the [CAN] or [ORGN] key to return display to the ORGANIZER menu.

Changing the home city or 2nd city setting:

1 In the world clock screen press [H] to change the home city, [2] to change the 2nd city. A list of the 222 available cities appears in the center of the screen.



Note: When a city is selected, its name moves to the beginning of the list. Therefore, the list is displayed in most recently used order. You can toggle the listing to alphabetical order by pressing the [TAB] key.

2 Using the [↑] and [↓] keys, move the dark bar to the name of the city you want to set. By typing a letter of the alphabet, the list automatically switches to alphabetical order and the dark bar moves to the first city whose name begins with that letter.

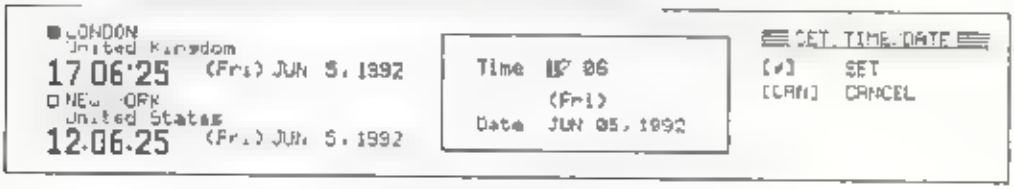
3 Press the [↵] key, and the selected city name appears on the left side of the screen. The date and time are automatically changed to adjust for the difference between the newly selected city and that which was formerly selected.

Note: If daylight savings time (summer time) is in effect in the selected city, move the cursor to the that city name and press the [INS] key. An asterisk then appears in front of the name. Then when you press [↵], the time is displayed as daylight savings time on the left side of the screen and a sun mark ☼ is displayed to the left of the time.

Setting the date and time:

Note. These following instructions set the date and time for the currently selected home city. Make sure that an appropriate home city is selected before setting the date and time.

1 In the world clock screen, press [S] to display a window for setting the date and time.



2 Using the [←], [→], [↑], and [↓] keys, move the cursor to the item to be changed and enter the numbers of the new setting. When you move the cursor to the date, the name of the month changes to a number.

Note: Date settings are limited to the range from January 1, 1980 to December 31, 2079.

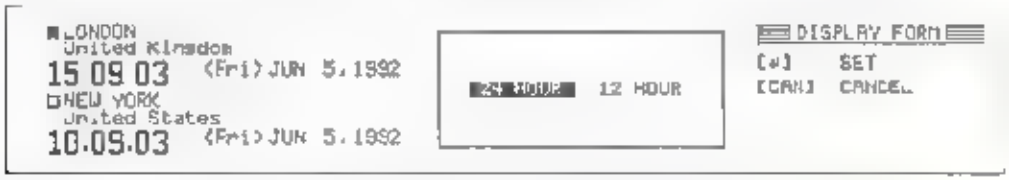
If you are using 12 hour clock display, you can change the time between AM to PM by putting the cursor on the characters "am" or "pm" that appear following the time and pressing the [A] or [P] key. (For details, see "Switching the clock display format" on the next page.)

3 Press [↵] to set the date and time for the selected home city. The date and time for the 2nd city are calculated automatically according to the offset from the home city.

4 The time is update at the instant that the [↵] key is pressed and the seconds portion of the time starts from zero. You can assure greatest accuracy by setting the time according to an time standard, such as a telephone time signal.

Switching the clock display format:

1. In the world clock screen, press [F]

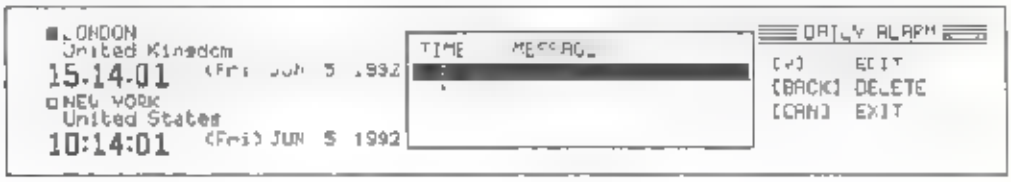


2. Using the [←] and [→] keys, move the dark bar to 24 HOUR or 12 HOUR, according to the format you want used for time display. Then press [↵].

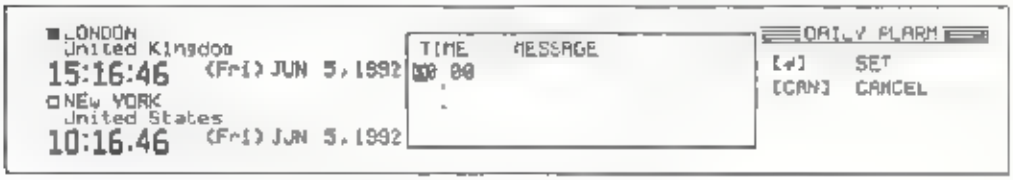
Setting the daily alarm:

You can set up to four daily alarm times.

1. In the world clock screen, press [A] to display a window for making daily alarm settings.

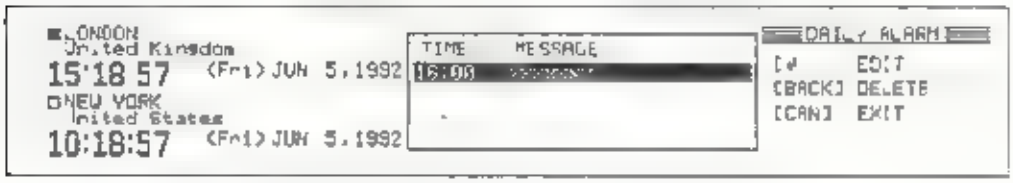


2 Press [↵] to enter the daily alarm settings edit mode. The dark bar disappears and a text cursor appears in the TIME field of the daily alarm settings window.



Input the time to be set as the daily alarm time. Enter the hour portion of the starting time to the left of the colon in the TIME field as a 2 digit number, then press the [→] key and enter the minute portion. Afterwards, press the [→] key and input any desired message of up to 20 characters.

3 When done entering the time and message, press [↵]. The dark bar reappears and the entered time is set as a daily alarm time.



To enter another daily alarm time, press the [↓] key to move the dark bar downward one line, then repeat steps 2 and 3. By moving the dark bar to an existing daily alarm setting, you can also use this procedure to edit a daily alarm setting.

To delete a daily alarm setting, move the dark bar to that line and press the [BACK] key.

Once you have made a daily alarm setting, an alarm sounds each day at the set time and the time and a schedule message is displayed. This occurs regardless of whether the power is on.

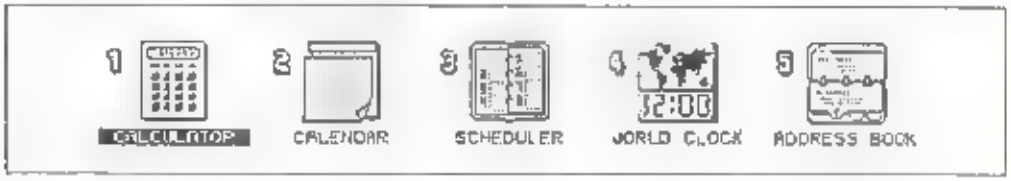
The alarm sounds for one minute. After one minute, the alarm stops sounding and the alarm display is cleared from the screen. To stop the alarm before one minute, press the [CAN] key.

Address Book Function

The address book function allows you to record up to 200 names, addresses, and telephone numbers. (The precise number varies according to the amount of available memory.)

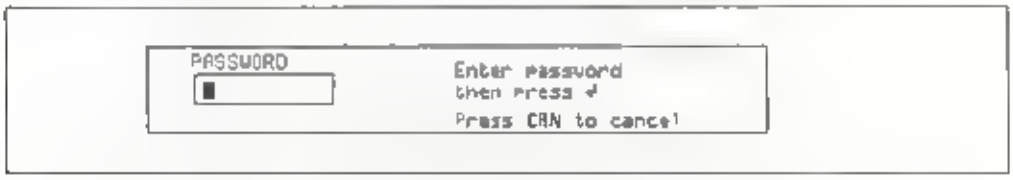
Display the ADDRESS BOOK screen as follows:

1. Press the [ORGN] key to display the ORGANIZER menu.



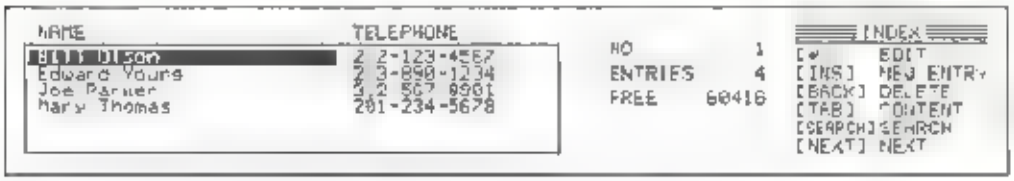
2. Press the [5] key.
   or
   Using the [→] key, move the dark bar to ADDRESS BOOK, then press [↵].

Note: If you have set a password, the password function interrupts at this point to request input of the password



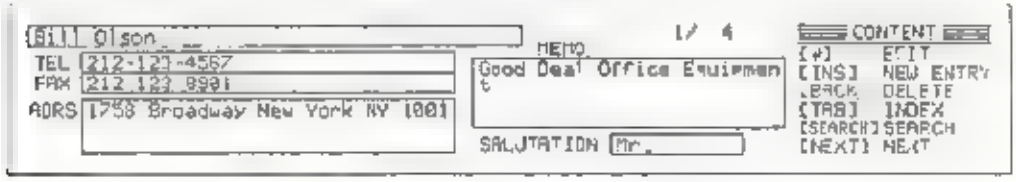
If the password entered at this point does not match the one set you cannot use the scheduler function

Upon selection the address book function displays a index of registered entries



The index displays the names and telephone numbers listed on all registered address cards. You can use the index to access individual address cards. To edit entries, you must access its card, you cannot edit names or telephone numbers directly through the index list.

3 Press the TAB key to display the address card contents screen



The address card contents contains name, telephone number, address, memo, and salutation boxes. Use this screen to create new address cards or to edit existing ones.

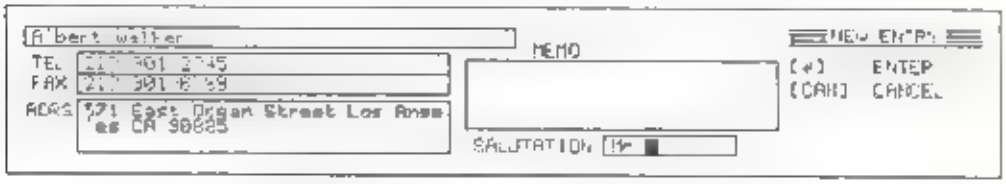
In the contents screen, you can view higher or lower address cards by pressing the ↑ or ↓ key. To return to the index screen, press the TAB key

4 To return to the ORGANIZER menu, press CAN or ORGN

To create a new address card:

1. In the address book index or contents screen, press [INS].

2. Make entries in the name, telephone number, fax number, address, memo, and salutation fields. Use the [↑] and [↓] keys to move the cursor.



The maximum number of characters you can enter in each field are as follows:

Name:	40	Address:	90
Tel. no:	30	Memo	100
Fax no:	30	Salutation:	10

3. When done entering data, press [↵] to register the new address card.

The address cards are arranged in alphabetical order according to name. When you register a new address card, it is automatically placed into the correct alphabetical order.

Editing an existing address card:

1. Using the [↑] and [↓] keys, move the dark bar through the index to the address card name that you want to edit.
   or
   In the contents screen, use the [↑] and [↓] keys to display the address card that you want to edit.

Note: By entering the first letter of a name, you can quickly move the dark bar to the first address card having a name beginning with that letter.

2. Press [↵] to enter the address card edit mode. A text cursor appears at the beginning of the name field of the address card being edited.

3. Move the cursor using the [←] [→] [↑], and [↓] key and make any desired changes.

4. Press the [↵] key to set the changes and return to the screen you were in before editing started.

Deleting an address card:

1 Using the [↑] and [↓] keys, move the dark bar through the index to the address card name that you want to edit.
or
In the contents screen, use the [↑] and [↓] keys to display the address card that you want to edit

Note: By entering the first letter of a name, you can quickly move the dark bar to the first address card having a name beginning with that letter

2 Press [BACK] The message "Deletes this entry Are you sure?" then appears to ask for confirmation that the address card is to be deleted

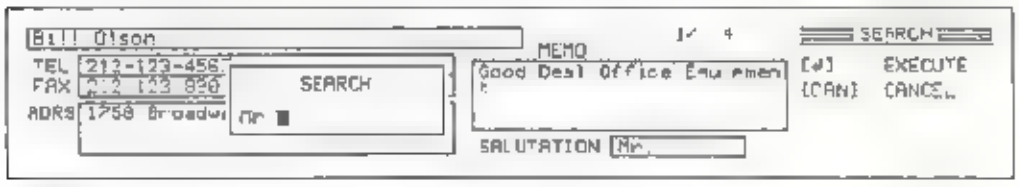
3 Pressing [Y] at this point deletes the address card Pressing [N] or [CAN] cancels deletion

Searching for an address:

When you have many address cards on file, use the following method to quickly find the one you want.

1 In the address book index or contents screen, press [CTRL] + [S] (SEARCH

2 Input any part of the address card entry that you remember, such as part of the name, telephone number, or address The more detail you can remember input, the better the chance that you will get the card you want.



3 Now press return to display the first address card that contains the entered word, phrase, or number If the card you want does not appear immediately press [CTRL] + [A] (NEXT) to go on to the next card

Note: You can use this function to retrieve a batch of address cards in a category for successive display. For example, if you only want to look at the address cards of people who live in a certain city, enter that city name in step 2 above and press [↵]. Afterwards, you can look other address cards for people living in that city by pressing [CTRL] + [A] (NEXT).

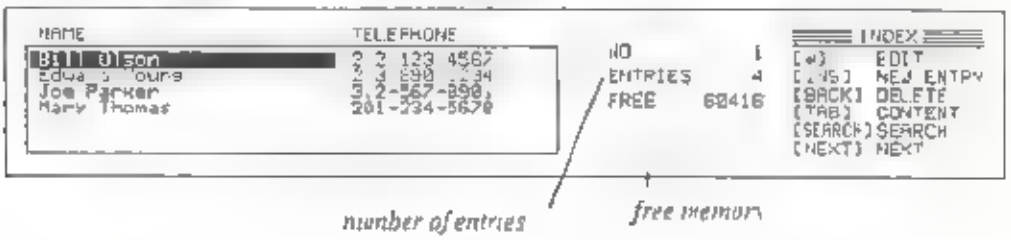
Similarly, if you want to look at address cards for people with the same given name, enter that name; or if you only want to look at mens' address cards, enter the salutation "Mr."

Saving an address card:

When you input an address, a file called ADDRESS.DB is automatically created in built-in memory. This file contains the individual address cards. If a password is set, this file automatically becomes a secret file.

This file will hold a maximum of 200 address cards. However, built-in memory is also used for storing document files. Therefore, the number of address cards that the file can hold may vary according to the amount of available built-in memory.

The number of address cards stored in the file and the amount of remaining built-in memory are displayed near the center of the address book function's index screen.



WORD PROCESSOR MENU

Basic Operations

Entering text in work memory

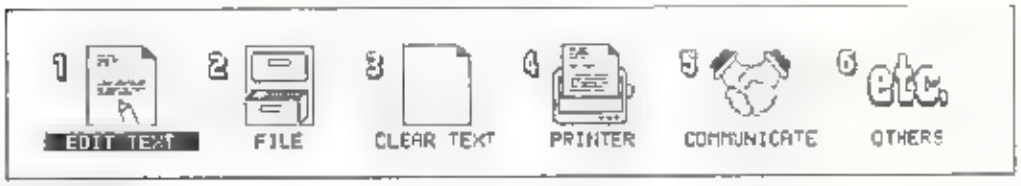
Work memory:

Work memory is the temporary memory on the display for your text creating or editing (up to the 24,000 characters). When you want your file to be saved for future use, see the "File Operations" chapter.

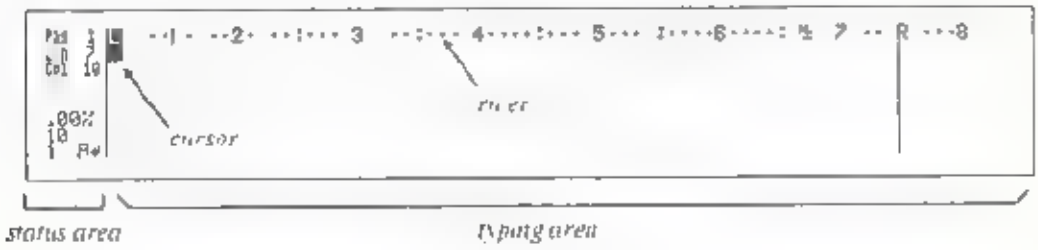
Entering text:

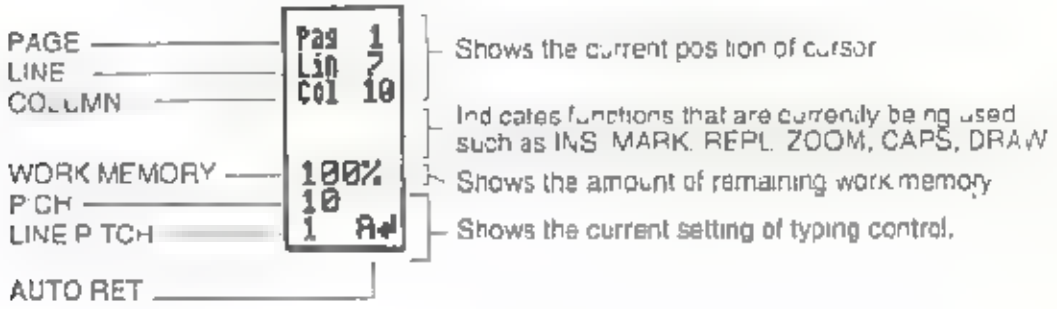
1. Press [WP] to show the Word Processor menu

   Pressing [WP] always invites you to the Word Processor menu, even when you are in the Organizer functions such as calculator or world clock



2. Press [1].
   or
   Locate the dark bar on the EDIT TEXT using [-], then press [↵].
   The Edit Text screen appears.





Note: Press [WP] at any time to return to the Word Processor menu.

3 Type the text. Each character that you type appears on the display and the cursor (black rectangle) moves to the next position. As the cursor moves the numbers in the column counter and line counter change to show the current cursor position. The cursor on the ruler (ruler cursor) moves left and right along with the cursor to show you the column number of the current cursor position.

Press [SPACE] to make a space between the words. The cursor moves one space to the right. Press and hold this key to make more spaces.

Press [CTRL] + [SPACE] (MICRO) to make a 1/60 inch space between the words.

Note: If you press [SPACE] on the previously typed character, the character will be deleted replacing with a space.

Auto return:

The auto return function performs the word wrap. At the end of a line when you type a character or word that goes beyond the right margin, the entire word is automatically transferred to the beginning of the next line. The cursor moves to the next line. It eliminates the need to press [↵] at the end of each line.

This is the word wrap.

Note: At the end of a paragraph or when you want a blank line, you need to press [↵].

The auto return function is automatically activates when you first power on. You can clear the auto return when you do not want to use it, for example when you want to type text beyond the right margin.

Press [CTRL] + [INS] (AUTO RET) to clear the auto return. The sign A↵ disappears from the status area.

To reset auto return, press [CTRL] + [INS] (AUTO RET) again.

Syllable hyphen:

When you type a long word at the end of the line and the auto return function transfer the word to the next line, it makes long blank spaces at the end of the line. To prevent ragged line end, hyphenate the word using a syllable hyphen.

Press [CTRL] + [H] (SYL HYP) at the proper position in the word to divide it. Nothing appears at this time. When you type the remainder of the word and it extends beyond the right margin, a syllable hyphen "¬" appears and the remainder moves to the next line.

Note: If the word is no longer at the end of the line after editing or reformatting, the syllable hyphen is removed.

Required hyphen:

When you type a hyphenated word which is beyond the right margin, the auto return function automatically divide the word at the hyphen and transfer the rear part to the next line. To prevent dividing the word, hyphenate the word using a required hyphen.

Press [CTRL] + [G] (REQ HYP) at the hyphen position. A required hyphen "-" appears.

When you type the remainder of the word and it extends beyond the right margin, the whole word moves to the next line.

Moving the cursor

To move around in the document you have typed, use the arrow keys alone or in combination with other keys.

[←]	Moves the cursor one space to the left. Press and hold this key to move the cursor continuously to the left. When it reaches the left margin, it moves up to the end of the preceding line.
[→]	Moves the cursor one space to the right. Press and hold this key to move the cursor continuously to the right until it reaches the right end over column 136.
[↑]	Moves the cursor up one line Press and hold this key to move the cursor continuously upward until it reaches the top line
[↓]	Moves the cursor down one Line Press and hold this key to move the cursor continuously downward until it reaches the bottom l ne of your document.
[ALT] + [←] (WORD L)	Moves the cursor to the beginning of the word to the left. Press and hold this key combination to move the cursor continuously to the left from word to word. When it reaches the beginning of the last word on a line nearest the eft margin, it automatically moves up to the end of the preceding line.
[ALT] + [→] (WORD R)	Moves the cursor to the beginning of the word to the right Press and hold this key comb nation to move the cursor continuously to the right from word to word. When it reaches the last word on a Line nearest the right margin, it automatically moves down to the left margin on the following Line
[ALT] + [↑] (PREV P)	Moves the cursor to the top of the previous page. If the cursor is in the middle of the page, it first stops at the top of the current page.

ALT + ↓ (NEXT P)	Moves the cursor to the top of the next page
CTRL + ← (EXPRS)	Moves the cursor to the left margin. If an indention is set on the line, the cursor first stops at it.
CTRL + → (EXPRS)	Moves the cursor to the right margin. If there is text on the line, the cursor first stops at the end of it.
CTRL + ↑ (BEGIN)	Moves the cursor to the top of the document
CTRL + ↓ (END)	Moves the cursor to the end of the document

Correction/deletion/insertion

To correct an incorrect character.

1. Position the cursor on the incorrect character.
2. Type the correct character. The incorrect character is replaced with the correct one. The cursor moves to the next character.
   or
   Press SPACE. The character is replaced with a space. The cursor moves to the next character.

Note: While using the insert function, you cannot correct character by overwriting.

To delete a character to the left of the cursor:

1. Position the cursor to the immediate right of the character to be deleted.
2. Press BACK. The cursor and the following text move one space to the left deleting the selected character.

   Press and hold this key to delete more characters to the left of the cursor. When you delete all the characters back to the left margin, the cursor moves up to the end of the preceding line and deletion continues.

To delete at the cursor position:

1. Position the cursor on the character to be deleted
2. Press [ALT] + [BACK] (DEL →). The character is deleted and the following text moves to the cursor position.

   Press and hold down this key combination to delete more characters to the right of the cursor.

To delete a word:

1. Position the cursor at any point in a word or on a space immediately following the word.
2. Press [ALT] + [−] (WORD DEL). The word is deleted. The cursor and the following text move to the left.

   Press and hold this key to delete more words to the left of the cursor.

To delete a line:

1. Position the cursor anywhere in the line to be deleted.
2. Press [ALT] + [=] (LINE DEL). The line is deleted. The following lines move up one line.

   Press and hold this key combination to delete more lines at and below the cursor position.

To retrieve accidentally deleted text (Undelete function):

If you mistakenly delete a character, word, line, or text block, do not move the cursor. Press CTRL + BACK (UNDEL) and the undelete function restores the deleted text to its original position.

If you move the cursor before you realize that you accidentally deleted text, position the cursor at the point where the text was deleted. Then press CTRL + BACK (UNDEL) to retrieve the deleted text.

Note: If you perform another function after you deleted the text, the undelete memory is cleared and you cannot retrieve the deleted text.

To insert text (Insert function):

1. Press INS. INS is highlighted in the status area.
2. Position the cursor at the position in the document where you want to insert text.
3. Type the text to be inserted. Each time you type a character, the cursor and the following text move one space to the right.

   Pressing ↵ in the middle of a line transfers the last part of that line to the next line. (You can divide a line into two lines.)

   Pressing TAB moves the cursor to the next tab along with the following text.
4. Reformat the text using ALT + 9 (REFORM) if necessary.
5. When you have completed inserting the text, press INS again. INS in the status area disappears.

To insert a line:

1. Position the cursor anywhere on a line where you want to insert a blank line.
2. Press ALT + INS (LINE INS). A blank line is inserted. The line at the cursor position and the following lines move down one line. The cursor moves to the left margin on the blank line.

   Press and hold this key combination to insert more blank lines.

Storing Text to the Store Memory

After you create a document, store it as a file to the store memory for future use. With this way you can have a copy of your document, including its format, even after you clear it from the work memory. Later you can recall the document for more editing or printing.

1 Press [WP] to display the Word Processor menu.

2 Press [2]
or
Locate the dark bar on the FILE using [←] or [→], then press [↵]

The File menu appears.

3 Press [2]
or
Locate the dark bar on the STORE using [←] or [→], then press [↵]

The Store Text screen appears.

4. Type the file name. The name can contain up to 8 characters.

   A space and characters * and ? cannot be used in the file name.

5. Press [↵] to begin storing the file.

   When storing is completed, the screen returns to the File menu.

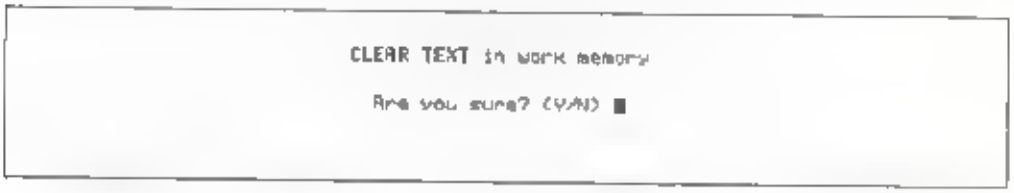
Note: For more instructions on the file operation such as recalling file and renaming file, see "File Operations" chapter.

Clearing text from work memory

Before you start new text entering, clear the text from the work memory.

1. Press [WP] to display the Word Processor menu.
2. Press [3]
   or
   Locate the dark bar on the CLEAR TEXT using [↑] or [↓], then press [↵].

   The Clear Text screen appears and asks if you really want to clear the text from the work memory.



3. Press [Y] to clear the text from the work memory. The screen returns to the Word Processor menu.

   All settings return to the preset settings. All functions except the spelling check are cleared automatically.

   Press [N] to prevent clearing the text in the work memory.

Note: It is convenient for you to store a frequently-used page format to the store memory and recall it for the new text after you clear the text from the work memory. See "Storing a format to the store memory" in the "Functions 1 (Formatting)" chapter.

Work memory full

1 You can type up to the 24,000 characters in the work memory. The memory counter in the status area indicates the percentage of the free work memory.

2 When the free work memory is down to 1% and there is text in the copy/move memory, the window shown below appears. It asks you whether you want to clear the copy/move memory.

Note: The text for copying or moving remains in the copy/move memory, occupying space in the work memory. You can obtain more space in the work memory for text by clearing the copy/move memory. (See "Copying a text block" and "Moving a text block" in the "Functions 3 (Editing)" chapter.)

3 Press [Y] to clear the copy/move memory. Continue typing text.

4. If the free work memory drops to 1% when there is no text in the copy/move memory, the message Work memory is full appears for a few seconds. It shows that you can enter no more than about 240 characters.

5. Finish the text. A beep sounds as you type each character.

6 Press [WP] to return to the Word Processor menu and go to the File menu. Store the current text to the store memory as a file and clear the work memory. Then continue the text as a separate file.

Note: When the free work memory is down to about 60 characters or less, the message Work memory is full appears every time you type a character. It warns you that you are very close to filling up the work memory. Finish typing text before the work memory is completely full.

FILE OPERATIONS

Store memory; built-in memory and card memory

To save the document in the work memory for future use, store it as a file to the store memory. Files in the store memory can be recalled for editing or printing. Unnecessary files can be deleted.

There are two types of the store memory available: built-in memory and optional card memory.

Built in memory:

The built-in memory holds up to 62,000 characters divided into a maximum of 64 separate files. The built in battery protects all the files stored in the built-in memory for about 5 years, even if you power off.

Card memory:

Card memory is optional memory that you can use in the same manner as a computer diskette. When you buy memory cards, be sure to get SRAM cards (PCMCIA Version 1.0) with a capacity of from 64 Kbytes to 1 Mbyte (1024 Kbytes). To use card memory, insert it into the card memory slot located on the left side of the unit.

Note: Before using a new memory card for the first time, make sure that it contains a card battery. After confirming that the battery is present, you must initialize the card to prepare it for data storage. (See "Initializing card memory" and "Changing memory card batteries" in the "MAINTENANCE" chapter.

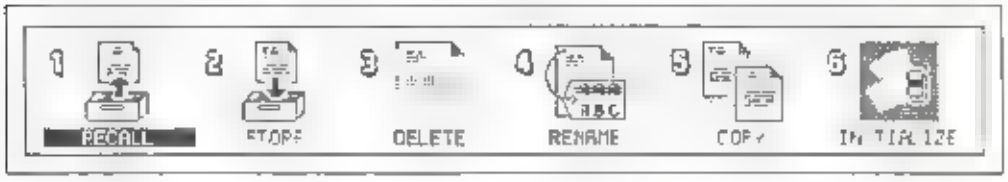
Storing text as a file

To save the document in the work memory for future use, store it as a file to the store memory.

To store a new file:

1. Press [WP] to display the Word Processor menu.
2. Press [2].
   or
   Locate the dark bar on the F LE using [←] and [→], then press [↵].

   The File menu appears.



3. Press [2].
   or
   Locate the dark bar on the STORE using [←] and [→], then press [↵].

   The Store Text screen appears.

4. Check if your desired store memory is selected, built-in memory or card memory. Press [TAB] to change the store memory.
5. Type the file name. The name can contain up to 8 characters. Do not use a space, asterisk (*) and question mark (?) in the file name.
6. Press [↵] to begin storing the file.
7. When storing is completed, the screen returns to the File menu.

Note: In order to create a new file after storing file to the store memory press [3] in the Word Processor menu to clear text from the work memory

To store the edited file for overwriting:

1. Press [WP] to display the Word Processor menu.
2. Press [2].
   or
   Locate the dark bar on the FILE using [←] and [→], then press [↵]
   The File menu appears.

3. Press [2]
   or
   Locate the dark bar on the STORE using [←] and [→] then press [↵]
   The Store Text screen appears.

4. Check if your desired store memory is selected built-in memory or card memory. Press [TAB] to change the store memory
5. The original file name appears beside ENTER FILE NAME
   or
   Press [↑] to move the cursor in the directory Position the cursor on the desired file name by pressing [↑] or [↓], and press [↵] The file name is automatically entered.

6 Press [J] The message appears to be sure you really want to overwrite the file.

7. Press [Y] to begin overwriting the file

When storing is completed, the File menu appears again.

Press [N] to cancel overwriting of the file.

Note: If you have set a password, the password function interrupts at this point to ask whether you want to make the file a secret file (a file with password protection).

The file is saved when you select YES or NO

Recalling a file

For editing or printing text stored in the store memory, recall the file from the store memory into the work memory.

To recall a file from the store memory:

1. Press [WP] to display the Word Processor menu.
2. Press [2].
   or
   Locate the dark bar on the FILE using [←] and [→], then press [↵].

   The File menu appears.

3. Press [1]
   or
   Locate the dark bar on the RECALL using [←] and [→] then press [↵].

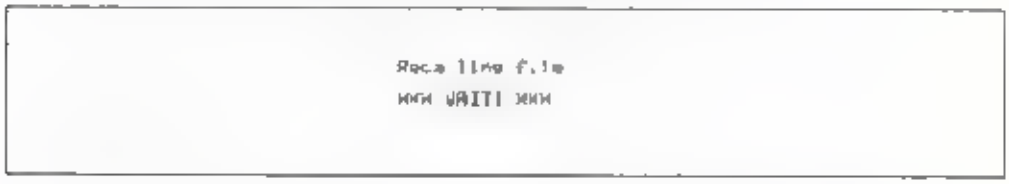
   The Recall File screen appears.

4. Check if your desired store memory is selected, built-in memory or card memory. Press [TAB] to change the store memory.
5. Position the cursor in the directory to the file name to be recalled by pressing [↓] or [↑].

6. Press [↵].

   If there is text in the work memory, the following message appears. Press [↵] to clear the present text and recall the file.

Note: When you want to insert the file into the present text, see "To recall and insert a file into the text in the work memory."



7. When recalling is completed, the Edit Text screen with the recalled text appears automatically. The page format of the recalled file is automatically set.

To recall and insert a file into the text in the work memory:

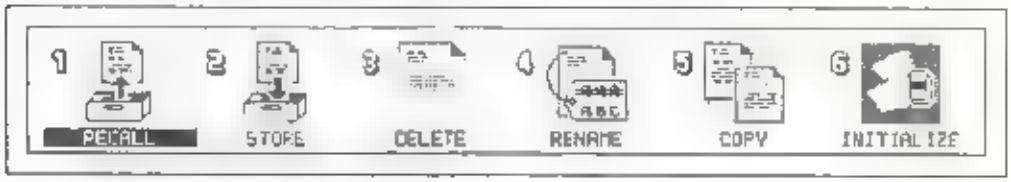
You can insert a recalled file into any position in the present text in the work memory. It is useful to store a repeated phrase as a separate file and recall it as many times as you want.

1. Position the cursor at the point in the text where you want to insert the file.
2. Press [WP] to display the Word Processor menu.
3. Press [2]

   or

   Locate the dark bar on the FILE using [←] and [→], then press [↵].

   The File menu appears.



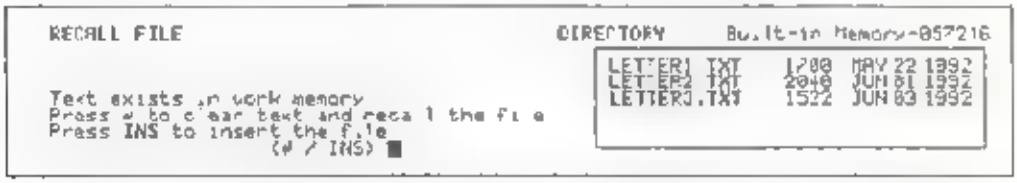
4. Press [1].
   or
   Locate the dark bar on the RECALL using [←] and [→], then press [↵].

   The Recall File screen appears.

5 Check if your desired store memory is selected, built in memory or card memory. Press [TAB] to change the store memory.

6 Position the cursor in the directory to the file name to be recalled by pressing [↓] or [↑].

7 Press [↵]. The message appears to ask if you want to clear the present text before recalling.



8 Press [INS]. The recalled file is inserted to the last cursor position in the text. Then, the Edit Text screen appears with the cursor in the position it was in prior to inserting text. The page format of the recalled file is ignored.

Note: When the file being loaded is a secret file, a message appears asking for the password.

The file cannot be loaded without entering the proper password. With secret files, the file names are displayed in bold characters.

Deleting file

You can delete an unwanted file from the store memory

1 Press [WP] to display the Word Processor menu.

2. Press [2] .
   or
   Locate the dark bar on the F LE using [←] and [→] , then press [↵] .

   The File menu appears

3 Press [3] .
   or
   Locate the dark bar on the DELETE using [←] and [→] , then press [↵]

   The Delete File screen appears.

4 Check if your desired store memory is selected, built in memory or card memory. Press [TAB] to change the store memory

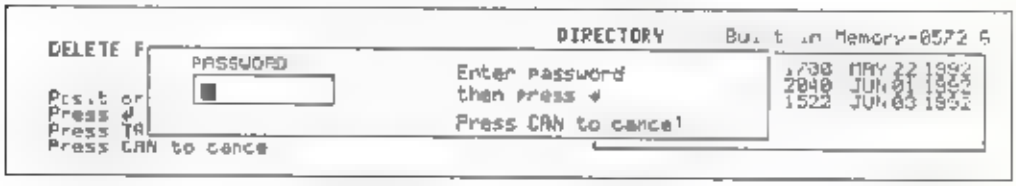
5 Position the cursor in the directory to the file name to be deleted by pressing [↓] or [↑]

6 Press [↵]. The selected file name appears beside DELETE FILE. The next message appears to make sure if you really want to delete the file.

7 Press [Y] to delete the file. The Delete File screen appears again.

Press [N] to cancel deletion of the file.

Note: When deleting a secret file, a message appears asking for the password.



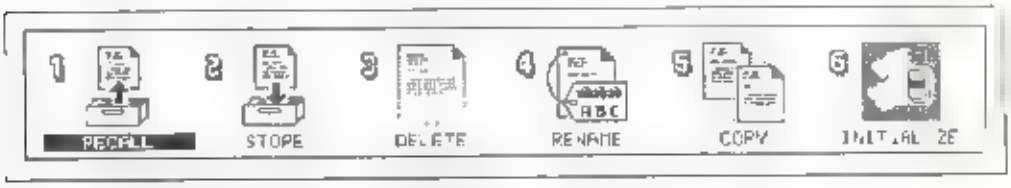
The file cannot be deleted without entering the proper password. With secret files, the file names are displayed in bold characters.

Renaming a file

You can change the name of the file that is stored in the store memory.

1. Press [WP] to display the Word Processor menu.
2. Press [2].
   or
   Locate the dark bar on the FILE using [←] and [→], then press [↵].

   The File menu appears.



3. Press [4].
   or
   Locate the dark bar on the RENAME using [←] and [→], then press [↵].

   The Rename File screen appears.

4. Check if the selected store memory is your desired one, built-in memory or card memory. Press [TAB] to change the store memory.
5. Type the old file name.
   or
   Press [↑] to move the cursor in the directory. Position the cursor on the file name to be renamed by pressing [↓] and [↑]. Press [↵]. The file name enters beside OLD FILE NAME.

6 Press [↵]. The cursor moves to beside NEW FILE NAME.

7 Type the new file name. The name can contain up to 8 characters. Do not use a space, asterisk (*), and question mark (?) in the file name.

8 Press [↵] to rename the file. The Rename File screen appears again.

Note: When renaming a secret file, a message appears asking for the password.

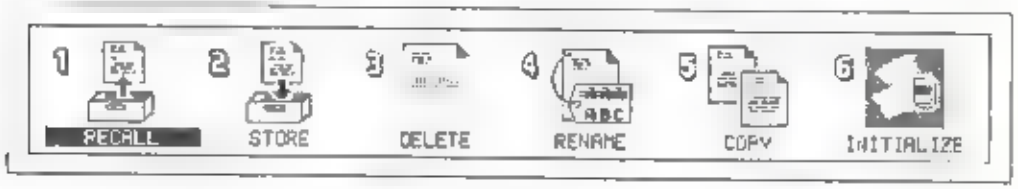
The file cannot be renamed without entering the proper password. With secret files, the file names are displayed in bold characters.

Copying a file

You can copy a file from built-in memory to card memory and vice versa.

1. Press [WP] to display the Word Processor menu.
2. Press [2].
   or
   Locate the dark bar on the FILE using [←] and [→], then press [↵].

   The File menu appears.



3. Press [5].
   or
   Locate the dark bar on the COPY using [←] and [→], then press [↵]

   The Copy screen appears.

4 Check if your desired copy direction is selected. Press [TAB] to change the copy direction.

5 Locate the dark bar on the file name to be copied using [←], [→], [↑], [↓], then press [SPACE]. An * mark appears to the left of the file name.

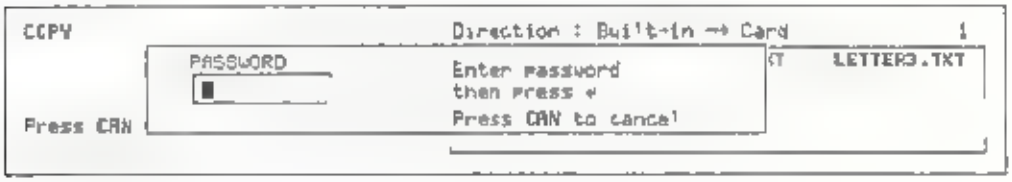
   Press [SPACE] again to deselect the file.

   When you copy all the files, press [INS]. All files are selected at a time and an * mark appears to the left of every file name.

   Press [BACK] to deselect all the files.

6. Press [↵] to start copying.

Note: When copying a secret file, a message appears asking for the password.



The file cannot be copied without entering the proper password. Note that the file that results when a secret file is copied is not a secret file.

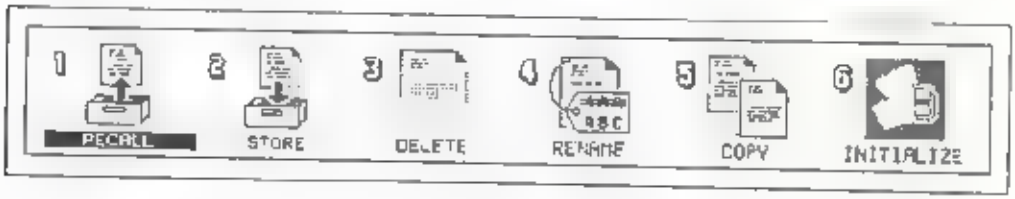
With secret files, the file names are displayed in bold characters.

Initializing the store memory

Initializing the store memory erases all the files in the built- in memory or card memory. Before using a new card memory, you must initialize it to set up all the space in the card memory.

To initialize the card memory:

1. Press [WP] to display the Word Processor menu
2. Press [2].
   or
   Locate the dark bar on the FILE using [←] and [→], then press [↵]
   The File menu appears.



3. Press [6].
   or
   Locate the dark bar on the INITIALIZE using [←] and [→], then press [↵]
   The Initialize Memory screen appears and asks if you really want to initialize the card memory

   Be sure to check if the card memory is selected

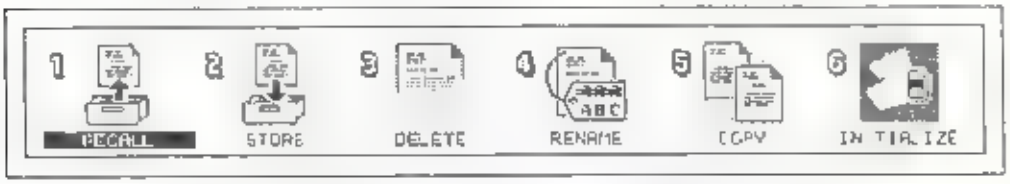
Note: IF YOU INITIALIZE THE CARD MEMORY THAT HAS ANY TEXT, ALL THE FILES STORED IN IT ARE ERASED

4. Press [Y] to initialize the card memory.
   Press [N] to cancel

To initialize the built-in memory:

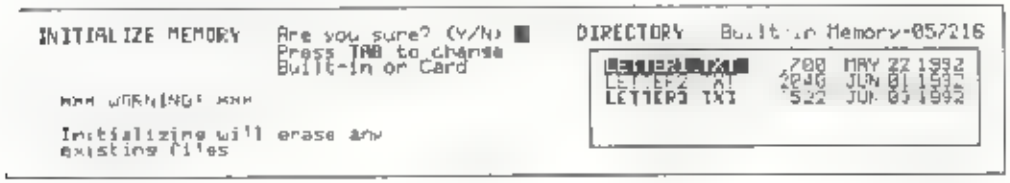
1. Press [WP] to display the Word Processor menu.
2. Press [2].
   or
   Locate the dark bar on the F LE using [←] and [→], then press [↵].

   The File menu appears.



3. Press [6].
   or
   Locate the dark bar on the INITIALIZE using , then press [↵]

   The Initialize Memory screen appears.



   Be sure to check if the built-in memory is selected.

Note: IF YOU INITIALIZE THE BU LT-IN MEMORY, ALL THE FILES IN THE BUILT-IN MEMORY ARE ERASED.

4. Press [Y]

   The message appears to make sure again if you really want to initialize the built-in memory.

5 Press [CTRL] + [WP] to start initializing built-in memory

If you press the key other than [CTRL] + [WP], initializing built-in memory is canceled.

Note: When you initialize built-in memory, the password is canceled. In order to use the password protection function, you must set the password again. (See the section on setting and changing a password.)

Card memory write protection

To protect the important text stored on the card memory, set the write protection on the card memory.

Once you write protect the card memory you cannot store, delete or rename the files in the card memory, nor can you initialize the card memory.

PRINT OPERATIONS

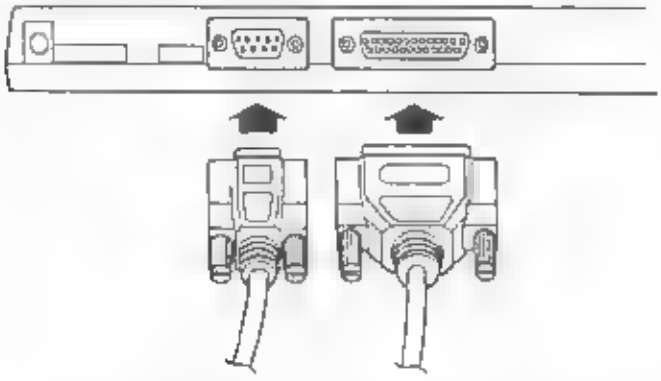
Before printing

Connect the printer:

The Notebook has two printer interfaces: a Centronics-type parallel interface, and an RS-232C-type serial interface. You can send data to your printer for printing by connecting its cable to one of these interfaces. Therefore, the first step to printing is to connect your printer to one of these interfaces.

1. Make sure that you have turned off the power of both the Notebook and your printer. Connecting the printer with the power turned on may result in damage to the printer, the Notebook, or both.

2. The two printer interface connectors are located on the Notebook's rear. Connect your printer's parallel or serial interface cable to the appropriate connector as illustrated below.



Serial cable (9-pin female) *Parallel cable (25-pin male)*

3. Plug the other end of the cable into the interface connector on the printer to be used for printing. Do not connect to both the parallel and serial interfaces at the same time, otherwise printing results may not be correct.

This completes connection of the printer.

Note: After connecting the cable to the printer and Notebook, secure the connectors at both ends using the connector retaining screws or lock clips.

Set up the printer:

Before printing, set up the printer for proper communication with the Notebook

1. Press [WP] to display the Word Processor menu.
2. Press the [4] key.
   or
   Using the [←] and [→] keys, move the dark bar to PRINTER, then press [↵].

3. Press the [2] key.
   or
   Using the [←] and [→] keys, move the dark bar to SET UP 1, then press [↵]

   The PRINTER SET UP screen appears.

Select the settings that match the connected printer. Select appropriate settings for each parameter by moving the dark bar with the [←] and [→] keys, then press the [↓] key to move on to the next parameter. The current setting for each parameter is underlined. The parameters are as follows

PRINTER Selects the type of connected printer from the following

IBM X24E	IBM 24-pin printer
IBM XIII:	IBM 9 pin printer
EPSON LQ:	Epson 24-pin printer
EPSON FX:	Epson 9 pin printer
CANON BJ10e:	Canon Bubble Jet printer
HP:	Hewlett Packard printer

SIMPLE: Select this option if your printer is not compatible with one of the above. This option allows you to print text, but does not allow printing of character attributes such as bold and underline.

INTERFACE: Selects the type of interface, parallel or serial.

PAPER FEED When printing the second and following pages of a document, selects whether the pages are fed automatically or manually

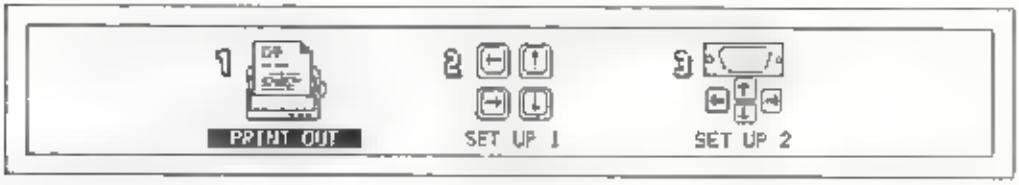
- AUTOMATIC: When the document has more than one page, paper is fed and printing is started automatically for each subsequent page.
- MANUAL: When the document has more than one page, you align the page manually, then start printing on that page by pressing some key

4. After making all selections, press ↵ .

Setting up the RS-232C serial interface:

When printing using the RS-232C serial interface, you must set up the serial interface parameters.

1. Press [WP] to display the Word Processor menu.
2. Press the [4] key.
   or
   Using the [←] and [→] keys, move the dark bar to PRINTER, then press [↵].



3. Press the [3] key.
   or
   Using the [←] and [→] keys, move the dark bar to SET UP 2, then press [↵]

   The RS-232C SET UP screen appears.

```
RS-232C SET UP     BAUD RATE    1200 2400 4800 9600 19200
                   BIT LENGTH    7    8
                   STOP BITS     1    2
                   PARITY       NONE  ODD  EVEN
                   X ON/OFF     DISABLE   ENABLE
```

Select the settings that match the connected printer. Select appropriate settings for each parameter by moving the dark bar with the [←] and [→] keys, then press the [↓] key to move on to the next parameter. The current setting for each parameter is underlined. The parameters are as follows.

BAUD RATE: Selects the speed used for communication with the printer.

BIT LENGTH Select either 7 bits or 8 bits as the data length.

STOP BITS Select either 1 or 2 as the number of stop bits used for delimiting each character of data from the next.

PARITY: Select the type of parity check to be used for checking the validity of transferred data.

X ON/OFF. Select whether or not XON/OFF data flow control is to be used.

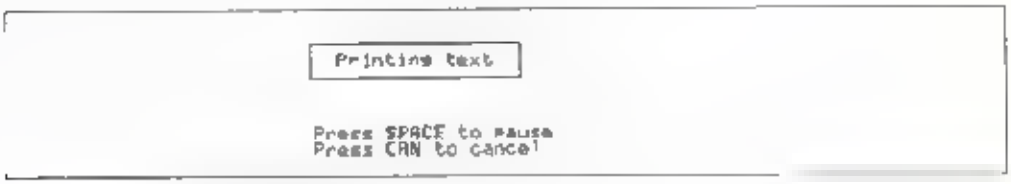
Note: Make sure that all parameter settings made on the Notebook match those of the printer. Otherwise, data will not print properly.

4. After making all selections, press [↵].

Printing Text

To print a single page:

1. Move the cursor into the page that you want to print.
2. Press [CTRL] + [4] (P PRINT) to start printing. The Printing text screen appears.



You can stop printing momentarily by pressing the spacebar. To resume printing, press [↵].

To cancel printing, press [CAN].

To print several pages:

1. Press [WP] to display the Word Processor menu.
2. Press the [4] key.
   or
   Using the [←] and [→] keys, move the dark bar to PRINTER, then press [↵]
3. Press the [1] key. The PRINT TEXT screen appears.

This screen shows the initial print settings. To change a setting, move the cursor to that setting, then type the number corresponding to the setting desired.

* FROM PAGE

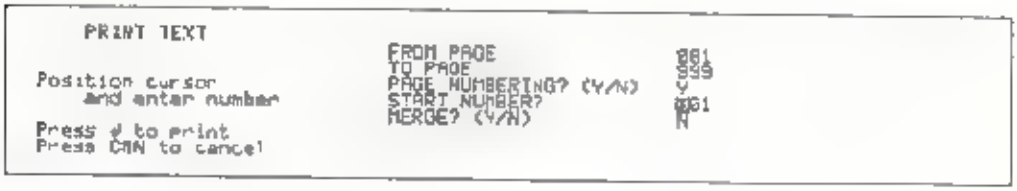
This setting specifies the page from which printing is to start. The initial setting is "1", indicating that printing is to start from the first page.

* TO PAGE

This setting specifies the last page to be printed. The initial setting is "999", which indicates that printing is to continue through to the last page of the document.

* PAGE NUMBERING

This setting determines whether or not page numbers are to be printed on each page. The initial setting is N (NO).
If you change this setting to Y (YES), the message START NUMBER? 001 appears. If you want numbering to start from a number other than 1, type that number.



* MERGE

This setting selects whether mail merge printing is to be used. The initial setting is N (NO).

4. After making all selections, press ↵. The PRINT START screen appears.

This screen asks for confirmation that printing is to be started using the current settings. If so, press ↵ to start printing.

If you want to change any settings, move the dark bar to NO with the → key, then press ↵. Change the settings as desired, then start printing.

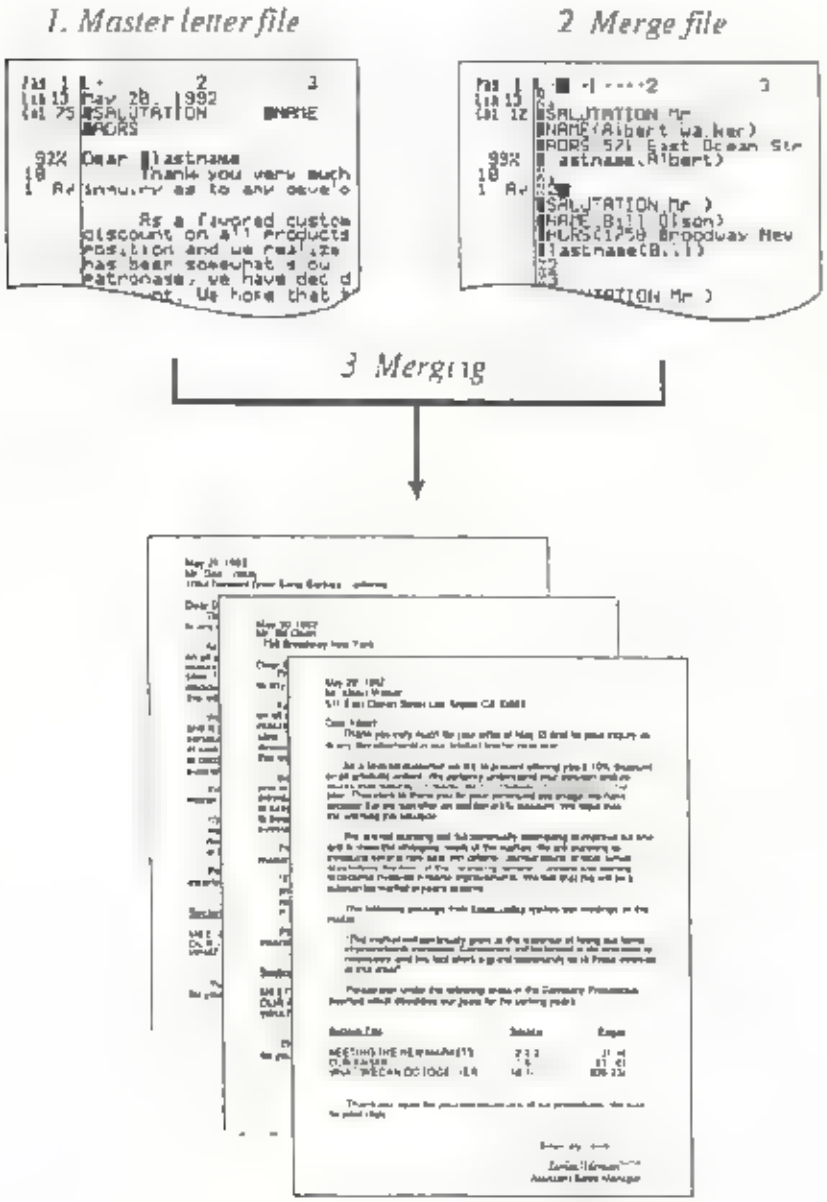
After starting printing, you can pause momentarily by pressing the spacebar. To resume printing, press ↵. If you want to cancel printing, press CAN.

5. When printing is completed, display returns to the printer menu.

Mail Merge Function

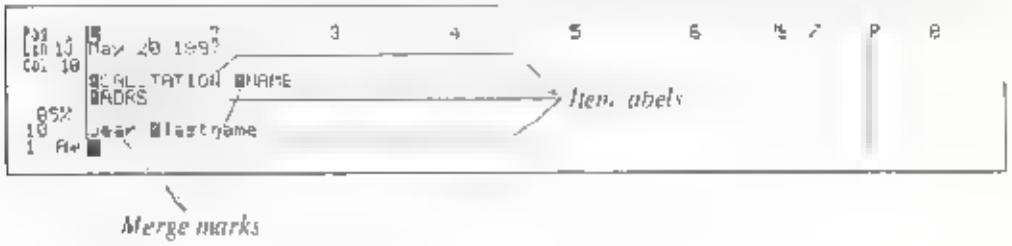
When you want to prepare several letters that have the same basic contents but different items such as names and addresses, you can produce such letters by preparing a single master letter file and a merge file of variable items, then merging the two to produce personalized letters at the time of printing. This eliminates the need to type individual letters to each recipient.

Use of the mail merge function is summarized in the diagram below.



Prepare the master letter file:

1. Press [WP] to display the Word Processor menu.
2. Press [1] to display the Edit Text screen, then type the text of the master letter.
3. While typing the master letter, press [CTRL] + [N] to insert a merge mark at every point where you want to merge in information that varies from letter to letter. Following each merge mark, type in an "Item label". This item label identifies records from which information is inserted when items are merged from the merge file.



Note: Only numerals and letters of the alphabet can be used in item labels.

4. When done typing the letter, return to the File Menu screen and press [2] to store the file.

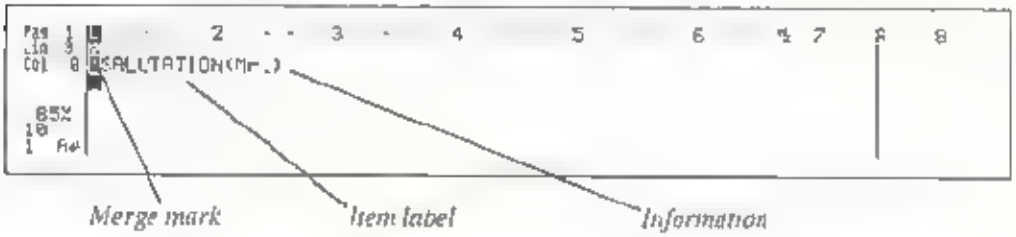
Prepare the merge file:

1 Press [WP] to display the Word Processor menu.

2 Press [1] to display the Edit Text menu

Type in all of the item labels used in the master letter and the information that corresponds to the item labels in the form of records in the following way

1) Type in the number of the first record as [%] , [1] , then press the [↵] key Type a merge mark with [CTRL] + [N] , then type in the item label and corresponding information for that record. Enclose the information in parentheses, ( ).



Note: Be sure to type the item label in exactly the same way as in the master letter

2) In the same manner, type all of the other item labels and corresponding information to be used in the first letter.

Note: It is also possible to automatically input information from an address book into the item labels and information used in records For details, see page 69.

3 Type the first record number into the line following the last entry, then press [↵] This completes preparation of the first record (the first letter).

3. Repeat step two to prepare the other records

   The maximum number of records that can be included in the merge file will vary according to the amount of available built-in memory. Each record number should consist of a percent sign followed by a numeral, i.e. %1, %2, %3, and so forth

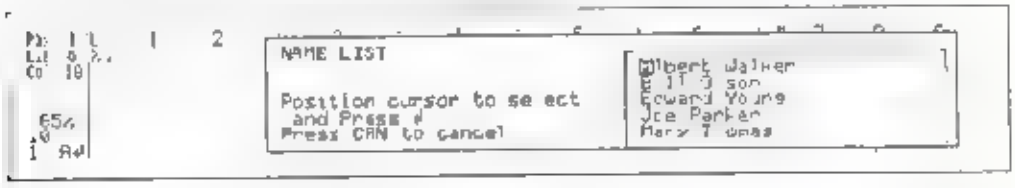
4. Return to the File Menu screen.

   Press the [2] key and input the merge file name as "MERGE FIL"

Note: Unless you specify the file name correctly, you will not be able to merge information from the merge file.

Using Address Book data to prepare Item Labels and Information in records:

1 From the Edit Text screen, type in a record number and press [↵]. Then press [CTRL] + [T] to display the Name List screen



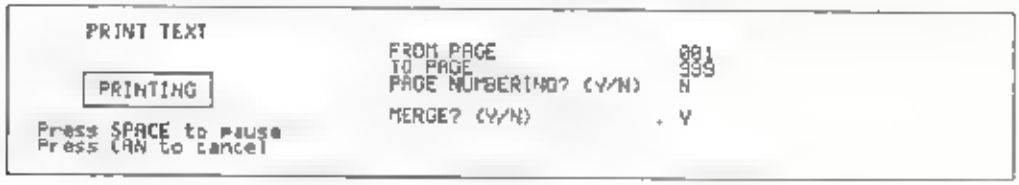
2 Using the [↑] and [↓] keys, move the cursor through the name list to the name of the person whose data you wish to use as merge data, then press [↵].

All information contained in the selected address book entry, including the name, salutation, telephone and fax numbers, and address, is automatically inserted into the merge file record

Merge records with the master letter and print:

1. Recall up the master letter file.
2. Return to the Word Processor menu and press the [4] key
   or
   Using the [←] and [→] keys, move the dark bar to PRINTER and press [↵]
3. Press the [1] key

   When the Print Text screen appears, make the appropriate settings. For the MERGE setting, select Y (YES), then press the [↵] key



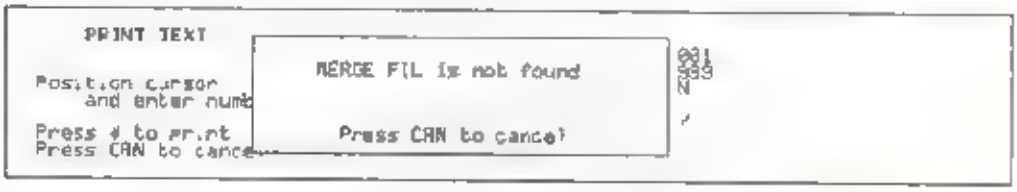
   Begin printing.

   You can stop printing momentarily by pressing the spacebar. To resume printing, press [↵].

   To cancel printing, press [CAN].

4. When printing is completed, display returns to the printer menu.

Note. If you try to do merge printing without storing a merge file, the following error message appears.



   Press the [CAN] key and return to the PRINT TEXT screen

If you have printing problems

If you cannot print or results are not as you expected, rev ew the steps off the printing procedure and try again. If you are using serial connection, it is particularly important o be sure that the printer s communicat.on settings match those of the Notebook

It is also important to ensure proper signal handshaking between the connectors of the printer and the Notebook. Make sure that you are using a cab e of the correct type. For de a..s, see the Interface Specificat ons

Interface Specifications

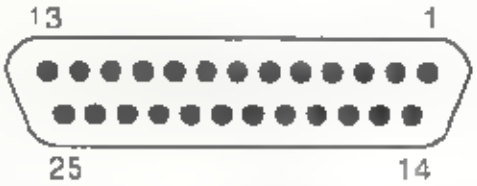
Centronics-type parallel interface

The Notebook provides the option of us.ng a variety of types of printers, including IBM or Epson 9 pin and 24-pin printers the Canon BJ 10e, or Hew ett-Packard printers.

- Interface type Centronics-type para.lel
- Connector: 25-pin male (D-sub min ature or equivalent)
- Synchronization Hardware handshaking (Notebook sends -STB pu ses to printer, and printer responds with either -BUSY or -ACK)
- Logic level: TTL

Connector pin assignments

Centronics paral.el connector, look ng into the connector from the rear of the machine



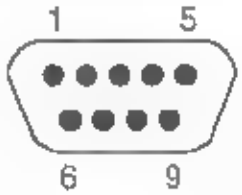
Pin	Signal	Abbreviation	Direct on
	S robe	$\overline{\text{STRB}}$	Out
2	Data	DATA 1	Out
9		DATA 8	
10	Acknow.edge	ACK	In
11	Busv	$\overline{\text{BUSY}}$	In
12	Not connected	NC	—
17			
18	Ground	GND	—
25			

RS-232C-type serial interface

- Connector. 9-pin female
- Synchronization. Start-stop (Asynchronous)
- Handshaking. By data signal (Tx, Rx) or control signal (RTS, CTS, GND, DTR)
- Signal level. EIA level converted to TTL level, and vice versa
- Voltage level (at signal input). Mark, +3V — +27V, Space −3V — −27V

Connector pin assignments

RS-232C connector, looking into the connector from the rear of the machine



Pin	Signal	Abbreviation	Direction
1	Not connected	—	—
2	Receive data	RX	In
3	Transmit data	TX	Out
4	Data terminal ready	DTR	Out
5	Ground	GND	—
6	Not connected	—	—
7	Request to send	RTS	Out
8	Clear to send	CTS	In
9	Not connected	—	—

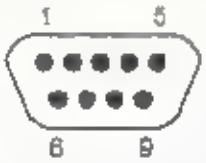
Note: DTR just duplicates RTS Selecting the main dictionary

COMMUNICATION WITH OTHER PCS

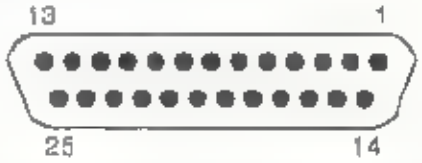
Before sending or receiving

Connect to the other computer and set up the RS-232C parameters:

In order to exchange text files with another computer, you must first connect the other computer using an appropriate RS 232C serial cable For the connection procedure, please refer to the "Before printing" and " Setting up the RS 232C serial interface" sections of the Print Operations chapter When you connect the RS-232C serial cable, verify that the signal lines of the computer are properly connected to he Notebook Proper connection is illustrated below, using the IBM PC as an example. (Both the IBM PC and other computers use 9-pin and 25 pin serial connectors.)



RS-232C connector looking into the back of a PC (9-pin)



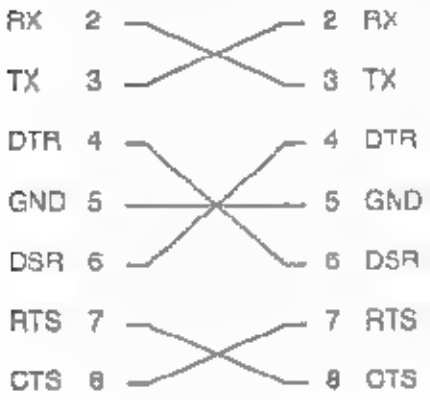
RS 232C connector looking into the back of a PC (25-pin)

Signal	Abbreviation	Direction	Pin No. (9-pin)	Pin No. (25-pin)	Pin No. (Notebook)
Ground	GND	—	5	7	5
Transmit data	TX	Out	3	2	3 Out)
Receive data	RX	In	2	3	2 (In)
Request to send	RTS	Out	7	4	7 (Out)
Clear to send	CTS	In	8	5	8 In)
Data set ready	DSR	In	6	6	—
Data terminal ready	DTR	Out	4	20	4 Out)
Ring indicator	RI	In	9	22	
Frame ground	—		—		

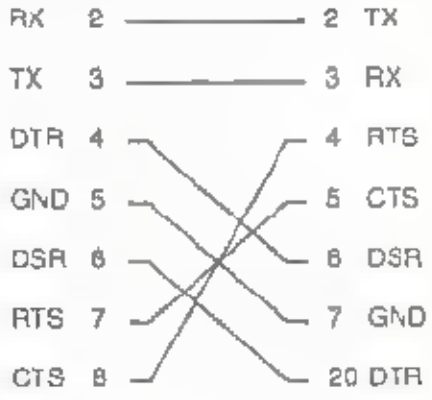
When making connection to a 9-pin connector, use one in which TX and RX are cross-connected, that is, which connects pin 2 (RX) on the Notebook side to pin 3 (TX) on the PC side and pin 3 (TX) on the Notebook side to pin 2 (RX) on the PC side. You cannot print using a cable which connects TX to TX and RX to RX, nor can you use such a cable to connect the Notebook to a computer for data communication.)

When making connection to a 25-pin connector, pin 2 on the Notebook side should connect to pin 2 on the PC side, and pin 3 on the Notebook side should connect to pin 3 on the PC side.

9 pin to 9 pin (cross cable)



9 pin to 25 pin (straight cable)

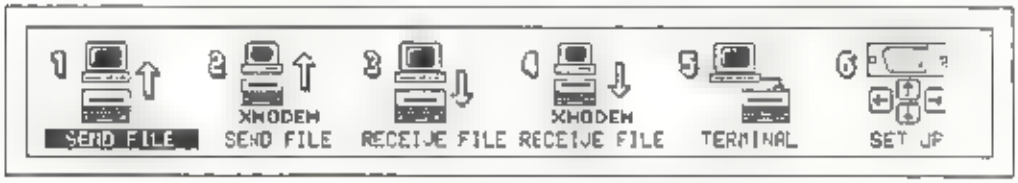


Sending and Receiving Files

You can either send or receive text fi es.

Sending a file:

1. Press [WP] to display the Word Processor menu
2. Press the [5] key
   or
   Us ng the [←] and [→] keys, move the dark bar to COMMUN CATE, hen press [↵]



3. Press the [1] key.
   or
   Us ng the [←] and [→] keys, move the dark bar to SEND FILE, then press [↵].

4 Check that you have selected the desired type of storage memory, built in or card To change the memory type selection, press the [TAB] key

5 Using the [↑] and [↓] keys, select the file to send then press [↵] to begin sending the file.

Using the [←] and [→] keys, select verbatim (byte for byte) file output or output of text data only. The default setting is NO, indicating verbatim file output.

If you select YES, information such as character attributes (e.g., bold and underline, is omitted from the transmission and only ASCII text data is sent.

When sending a file to a personal computer for processing using the computer's word processing software, it is advisable to omit character attributes from the transmission. This is because different software packages manage character attributes in different ways, and text may not be displayed properly by the computer's word processor if the file contains character attributes and other information that is not recognized by the word processor running on the computer. However, most computer word processing programs can be used to edit data from the Notebook provided you omit character attributes (bold and underline) by selecting YES in this selection screen.

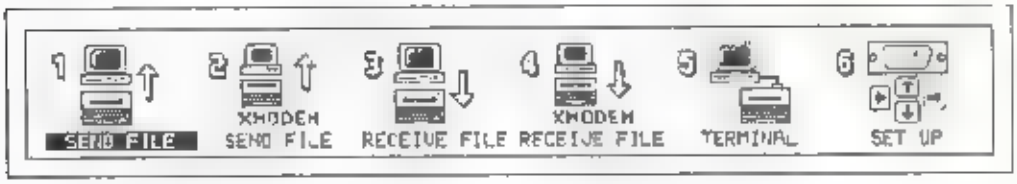
6. After making the selection, press [↵].

Note: In order to send the file, you also need to prepare the PC to receive it. If the PC is not ready to receive, the count will remain 0; when transmission starts, the count increases until all of the file has been sent.

Receiving a file:

1 Press [WP] to display the Word Processor menu.

2 Press the [5] key.
or
Using the [←] and [→] keys move the dark bar to COMMUNICATE, then press [↵].



3. Press the [3] key.
or
Using the [←] and [→] keys, move the dark bar to RECEIVE FILE, then press [↵].

4 Check that you have selected the desired type of storage memory, built-in or card. To change the memory type selection, press the [TAB] key.

5 Immediately to the right of ENTER FILE NAME, type in the name under which the received file is to be stored.
or
Press [↑] to move the cursor into the directory, then position the cursor on the name of an existing file with the [↑] and [↓] keys. After selecting the file, press [↵] to enter as the file name.

6. After entering the file name, press [↵] to begin receiving.

Note. The Notebook stands by to receive until the computer begins sending. While the Notebook is waiting, the count remains 0; when reception starts, the count increases until all of the file has been received.

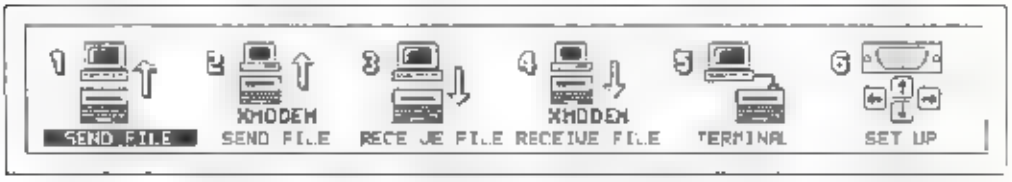
Sending and Receiving Files with XMODEM Protocol

Using the XMODEM protocol, you can send and receive binary files.

XMODEM is one of the protocols most widely used for transfer of files between personal computers. With this protocol, the sending side divides the data to be sent into blocks of 128 bytes each for transmission. As each block is received, the receiving side checks its validity and sends an acknowledgment of correct reception to the sending side. When you use the Notebook's XMODEM transfer function, the RS-232C parameters automatically default to Parity–None, Data bits–8 bits, and Stop bits–1 bit, overriding the settings made from the RS-232C SET UP screen.

Sending a file by XMODEM:

1. Press [WP] to display the Word Processor menu.
2. Press the [5] key.
   or
   Using the [←] and [→] keys, move the dark bar to COMMUNICATE, then press [↵].



3. Press the [2] key.
   or
   Using the [←] and [→] keys, move the dark bar to **XMODEM** SEND FILE, then press [↵]

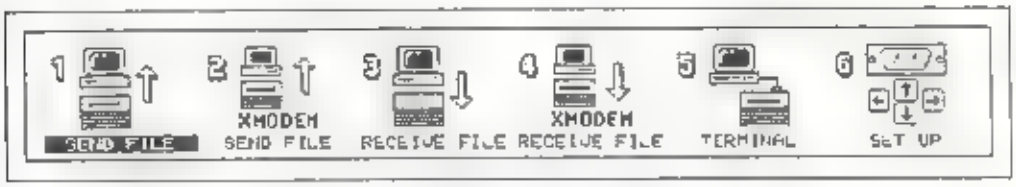
4 Do steps 4, 5, and 6 of the procedure described in the Sending a File section

Note: In order to send using XMODEM protocol, you must set up the computer to receive using the same protocol. Transmission does not begin until the computer becomes ready to receive

Receiving a file by XMODEM:

1 Press [WP] to display the Word Processor menu.

2 Press the [6] key
   or
   Using the [←] and [→] keys, move the dark bar to COMMUNICATE, then press [↵].



3. Press the [4] key
   or
   Using the [←] and [→] keys move the dark bar to **XMODEM** RECEIVE FILE, then press [↵].

4 Do steps 4, 5, and 6 of the procedure described in the "Receiving a file" section.

Note: In order to receive using XMODEM protocol, you must set up the computer to send using the same protocol. The Notebook stands by to receive until the computer begins sending.

Terminal mode

You can connect the Notebook to a host computer and use it as a simple terminal.

1. Press the [WP] key, and the Word Processor menu appears
2. Press the [5] key.
   or
   Using the [←] and [→] keys, move the dark bar to COMMUNICATE and press [↵].

3. Press the [5] key.
   or
   Using the [←] and [→] keys, move the dark bar to TERMINAL and press [↵]

In the terminal mode, characters typed on the Notebook's keyboard are output through the RS-232C interface, and data input through the RS-232C port is displayed on the Notebook's LCD screen

Note: In the terminal mode, the initial settings of local echo and auto linefeed are both OFF. These settings are appropriate if the computer to which the Notebook is connected echoes back characters that it receives over its own RS-232C interface, and if it outputs linefeeds following each carriage return.

If you cannot see characters you type while using your Notebook as a terminal connected to a computer, turn on local echo by pressing ALT + 1. Pressing ALT + 2 turns local echo off.

Similarly, if the Notebook screen does not scroll upward as lines are displayed at the bottom of the screen, turn on auto linefeed by pressing ALT + 3. To turn auto linefeed off, press ALT + 4.

The following is a simple example of how to use a personal computer together with your Notebook in the terminal mode.

Example: Using the Notebook as a keyboard with a personal computer

1) After making sure that the Notebook's communication parameters match those of the personal computer, connect the Notebook's RS-232C connector to the RS-232C connector on the computer, then put the Notebook in the terminal mode.

2) Type the following from the keyboard of the computer.

   A>CTTY COM1 ↵

3) The DOS prompt appears on the Notebook's screen. From this point, you can send DOS commands to your computer from the Notebook's keyboard.

4) When you are through using the Notebook as a terminal of your computer, type the following command from the Notebook's keyboard.

   A>CTTY CON ↵

5) The "A>" prompt reappears on your computer's screen and the connection to the Notebook is broken.

   When you use the Notebook with a modem, note that the connection to the modem is broken about one minute after you leave the terminal mode.

FUNCTIONS 1 (FORMATTING)

Character pitch

This setting determines the character pitch: 10 characters per inch (pica), 12 characters per inch (elite), or proportional spacing (PS). Characters appear on the display in the selected pitch.

Example:

To change character pitch before you type:

1. Press CTRL + 1 (PITCH). Each time you press this key combination, the pitch shown in the status area changes in following order: 10 → 12 → PS → 10. Select the setting you want.
2. Continue typing. The characters appear on the screen in the new character pitch.

   The position where you press CTRL + 1 (PITCH) is memorized as a pitch switching point.

To change the character pitch of text after you type it:

1. Position the cursor at the first character in the text where you want to change the character pitch.

   When you move the cursor on the existing text, the pitch setting of text at the cursor position automatically appears in the status area.

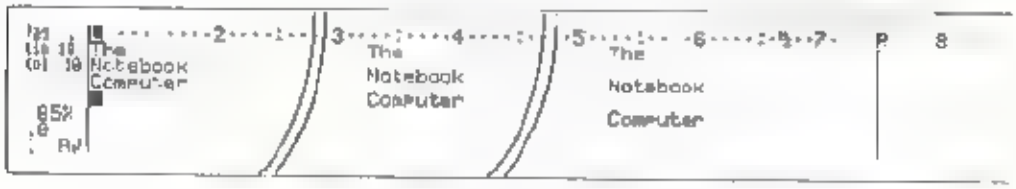
2. Press CTRL + 1 (PITCH). The character pitch of the text from the cursor position to the next pitch switching point changes.

Note: You can use the Marking a text block function to change the pitch through the marked range of text. Mark the text first and press CTRL + 1 (PITCH). Clear the marking after changing. See "Marking a text block" in the "Functions 3 (Editing)" chapter.

Line spacing

This setting determines the spacing of the lines.

Example



To change line spacing before you type:

1 Press CTRL + 2 (LINE SPACE) Each time you press this key combination the line spacing setting shown in the status area changes in the following order: 1 → 1½ → 2 → 1 Select the setting you want.

2 Continue typing. At the end of each line, the cursor moves down to the next line with the line spacing of the new setting.

The line where you press CTRL + 2 (LINE SPACE) is memorized as a line-spacing switching line.

To change line spacing after you type text:

1 Position the cursor on the line where you want to change the line spacing

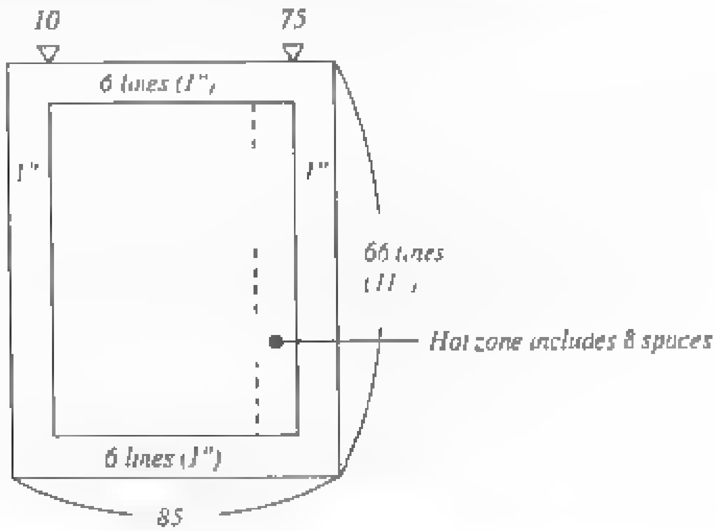
When you move the cursor through the existing text, the line spacing of text at the cursor position automatically appears in the status area

2 Press CTRL + 2 (LINE SPACE) The line spacing changes as you specified from the cursor position forward to the next line spacing switching line

Note: You can use the Marking a text block function to change the line spacing through the marked range of text Mark the text and press CTRL + 2 (LINE SPACE). Clear the marking after changing See Marking a text block" in the "Functions 3 (Editing)" chapter.

Page format

When you first turn on the power or when you clear the text in the work memory, preset page format settings are used



1. Press CTRL + 3 (FORMAT) in the Edit Text screen The Format Setting screen appears

```
  FORMAT SETTING

                             Left Margin   010    Paper Length    066 Lines
Position cursor              Right Margin  075    Top margin      006 Lines
   and enter number          Hot Zone      008    Bottom Margin   006 Lines
                             Paper Width   085                    (1"=6 Lines
Press # to finish            Tab space     008
Press CAN to cancel
```

2. The screen shows the current settings If you want to change any setting move the cursor to that setting and type the new number

   If you type an invalid number, the former setting will reappear when you move the cursor to the next setting.

   * Left Margin

   This sets the left margin position You can set it at any point from 0 to 125 The preset setting is set at column 10.

   * Right Margin

   This sets the right margin position You can set it at any point from 10 to 89. The preset setting is set at column 75.

Note: The left and right margins should be set apart a minimum of 10 spaces (1 inch.)

When you change the number of left margin, the number of right margin is automatically changed to keep the distance from the left margin constant. If you want right margin on the previous position type the previous number at the right margin setting after you change the left margin setting.

* Hot Zone

This indicates the number of spaces in the hot zone. As the cursor moves toward the end of a line, a beep sounds to warn you that the right margin is approaching. The area of a line between this beep and the right margin is the hot zone. You can change it from 1 to 20 spaces. The preset setting is 8 spaces.

* Paper Width

This determines the number of spaces in the paper width. You can change it from 11 to 136 spaces. The preset setting is 85 spaces (8½ inches).

* Tab Space

This determines the number of spaces between each of the constant tabs. You can change it form 3 to 20 spaces. The preset setting is 0. (No constant tabs.)

Note: When you set the constant tab, the individually set tab will be cleared.

* Paper Length

This determines the number of lines in the paper length. You can change it from 2 to 99 lines. The preset setting is 66 lines (11 inches).

* Top Margin

This determines the number of blank lines at the top of the page for printing. Text printing starts from the next line of this setting. You can change it from 0 to 97 lines. The preset setting is 6 lines (1 inch).

* Bottom Margin

This determines the number of blank lines at the bottom of the page. You can change it from 0 to 97 lines. The preset setting is 6 lines (1 inch).

Note: The top and bottom margins must be set apart a minimum of 2 lines.

3 Press [↵] after you have entered all the settings. The new page format appears in the Text screen.

Storing a format to the store memory

You can store the frequently-used page format (the settings of right margin eft margin, hot zone, paper width, paper length, top margin, and bottom margin) as a format file to the store memory, including the pitch and line space settings. It prevents the repetitive format setting you require.

To store a format file to the store memory:

1 Clear he text in the work memory (Press [3] in the Word Processor menu)

2. Press [1] to display the Edit Text screen.

3 Press [CTRL] + [3] (FORMAT) and set the page format you requ re

4 Set the pitch and line space settings you require

5. Press [WP] to back to the Word Processor menu

6 Press [2] tw ce o display the Store Text screen Check if your desired store memory is selected; built-in memory or card memory.

7. Store the file as you store a text file.

To use the format file:

1 Press [WP] to display the Word Processor menu

2 Press [2] then [1] The Recall File screen appears Reca l the format file as you recall a text file.

If there is text in the work memory the message appears to ask if you want to clear the present text before recalling Press [↵] to clear he text in the work memory and recall the file

Note: You cannot reca l the forma file if there is text in the work memory Be sure to clear the text in the work memory before reca ing the format file

The Edit Text screen appears The page format and the settings of p tch and line spac ng has been automatica l y changed to the reca led one

Note: When you store the text which is typed in the format file, change the file name from the format file name and store it as a separate file so that the format file will remain unchanged in the store memory and can be used for another new file.

Tabs

You can set tabs as you type in the Edit Text screen.

To set a tab:

1. Position the cursor on the point of the ruler where you want to set a tab.
2. Press CTRL + 5 (TAB SET). A short vertical line I appears on the ruler at that position. A maximum of 16 tabs can be set.

To clear a tab:

1. Position the cursor on or to the left of the tab position.
2. Press CTRL + 6 (TAB CLR). The I on the ruler at the tab position disappears.

   If you press and hold this key combination, the tabs to the right of the selected tab position are cleared one at a time.

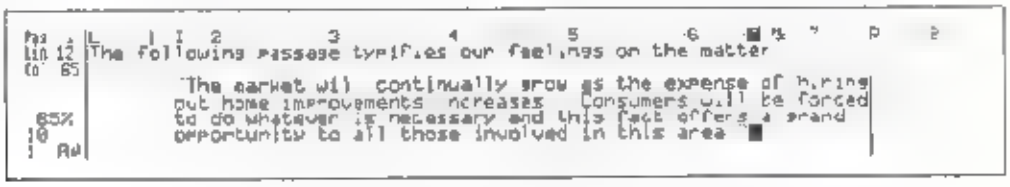
To use a tab:

1. Press TAB. The cursor moves to the next tab position to the right.
2. Type the text.

Indention

Indention is a temporary left margin to indent several lines, such as a paragraph of direct quotation

Example:



To set indention before you type:

1 Position the cursor on the point where you want to set an indention

2 Press [↑] to move the cursor up one line

3 Press [CTRL] + [7] (INDENT) I appears on the ruler at that position. (The text is not indented on this line)

4 Press [↵] The cursor moves to the indented position on the next line

5 Type the lines to be indented At the end of each line, the cursor returns to the indention position.

6 To clear the indention, press [CTRL] + [8] (IND CLR) on the new line The I on the ruler disappears The cursor automatically moves back to the left margin

The line on which you set or clear the indention is memorized as an indention set/clear line

To set or change the indention position after you type text:

1 Position the cursor at a selected point in the first line of text you want to indent

2. Press [↑] to move the cursor up one line.

3 Press [CTRL] + [7] (INDENT) The following lines, up to the next indention set/clear line, shift to the indention position

4. Reformat the text if necessary

To clear the indention after you type text:

1. Position the cursor anywhere in the first line from which you want to clear the indention.
2. Press CTRL + 8 (IND CLR) The lines up to the next indention set/clear line, shift to the left margin automatically The I on the ruler disappears
3. Reformat the text if necessary.

FUNCTIONS 2 (LAYOUT AND ENHANCING TEXT)

Centering

This function centers the text between the margins.

Example.

1 Type the text to be centered.

2 Press CTRL + C (CENTER) The text is centered between the left and right margins

If an indention has been set, the line is centered between the indent position and the right margin.

Note: You can use the Marking a text block function to center several lines at a time Mark the lines to be centered first and press CTRL + C (CENTER) See "Marking a text block" in the "Functions 3 (Editing)" chapter.

Setting right margin flush

This function aligns text at the right margin, one line at a time

Example:

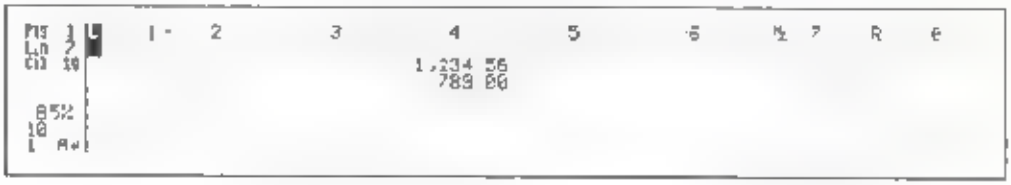
1. Type the text to be aligned at the right margin.
2. Press CTRL + R (R-FLUSH). The text is aligned at the right margin.

Note: You can use the Marking a text block function to align several lines at the right margin at a time. Mark the lines to be aligned at the right margin first and press CTRL + R (R-FLUSH). See "Marking a text block" in the "Functions 3 (Editing)" chapter.

Decimal tab

You can use a tab as a decimal tab to align the numbers with their decimal point.

Example:



1. Press CTRL + TAB (DEC TAB). The cursor moves to the next tab position to the right and the tab becomes a decimal tab.
2. Type the numbers preceding the decimal point. As you type each number the previously typed numbers move to the left.

   Press BACK to correct errors.
3. Type a decimal point. It appears on the tab position.
4. Type the numbers following the decimal point.
5. Repeat the same procedure on the following lines.

Note: You can use the decimal tab like a flush-right tab.

When typing numbers without a decimal point or when typing words, press ← , TAB , CTRL + TAB (DEC TAB) or ↵ instead of a decimal point. The right end of the characters aligns at the tab position.

Ending a page

When you want to end the text before you reach the bottom of the page (for example at the end of a chapter) use this function to end a page

1 Position the cursor at the point in the text where you want the page to end

2 Press CTRL + E (P END) A highlighted E appears at the cursor position Then, the cursor automatically moves to the top of the next page.

Press ALT + BACK (DEL →) to remove the E .

Example:

Zoom image

This function shows you the text layout of a page in a zoom image It lets you check the appearance of the page layout.

1. Position the cursor anywhere in the page to show the zoom image

2 Press CTRL + O (ZOOM) ZOOM is highlighted in the status area The zoom image of the page appears on the display, divided into several sections

Example

3. Press ALT + ↓ (NEXT P) to view the next page in the zoom image
   Press ALT + ↑ (PREV P) to view the previous page in the zoom image
4. Press CAN to return to normal screen viewing

Note: When the page size is too long or too wide to display the zoom image all at one time, you can see it in two steps. After the first zoom image appears, press any key. The second half of the page appears, divided into two sections. Press any key to return to the first zoom image.

Underlining

Example:

To underline as you type text:

1. Press CTRL + X (XXX. The " " (underline) appears in the status area below the pitch setting (10, 12 or PS.)
2. Type the text. Each character appears on the display with an underline.
3. Press CTRL + X (XXX) again to terminate the underlining.

   Pressing ↵, ↑, ↓, or CTRL + ↵ (↵) also terminates the underlining.

To add an underline after you type text.

1. Position the cursor on the first character or space to be underlined.
2. Clear the insert function when it has been activated.
3. Press CTRL + X (XXX). The character or space at the cursor position is underlined. Press and hold this combination to underline more characters to the right of the cursor.

To erase an underline:

1 Position the cursor on the first character or space where you want to erase the underline.

When you move the cursor to underlined text, the " " (underline) automatically appears under the pitch setting in the status area.

2. Clear the insert function when it has been activated.

3 Press CTRL + X (XXX). The underline at the cursor position is erased. Press and hold this key combination to erase more underlines to the right of the cursor.

Note: You can use the Marking a text block function to add or erase underlines on the marked range of text. Mark the text first and press CTRL + X (XXX). Clear the marking after changing. See "Marking a text block" in the "Functions 3 (Editing)" chapter.

Boldface characters

The bold function makes words stand out from the rest of the text Use th s function to emphasize titles, highlight information, and so on

Example

To boldface characters:

1 Press CTRL + B (BOLD) The pitch setting in the status area turns into boldface characters. (**10**, **12**, or **PS**.)

2 Type the text Each character appears on the screen as a boldface character

3 Press CTRL + B (BOLD) again to terminate the boldface typing

Pressing ← , ↑ , ↓ , or CTRL + ↵ (←) also terminates the bold typing.

To boldface previously typed characters:

1. Position the cursor on the first character to be changed

2. Clear the insert function when it has been activated

3 Press CTRL + B (BOLD) The character at the cursor position changes to a boldface character

Press and hold this key combination to change more characters to the right of the cursor

To change boldface text back to normal text:

1 Position the cursor on the first character of the boldface text to be changed

When you move the cursor to boldface text, the pitch setting in the status area automatically appears in boldface type.

2. Clear the insert function when it has been activated.

3 Press CTRL + B (BOLD). The boldface character at the cursor position returns to normal type.

Press and hold this key combination to change more characters to the right of the cursor

Note: You can use the Marking a text block function to change the marked range of text into boldface characters, and vice versa Mark the text first and press CTRL + B (BOLD) Clear the marking after changing See "Marking a text block" in the "Functions 3 (Editing)" chapter

Superscript/Subscript

The superscript/subscript function lets you type text that includes superscript or subscript characters, such as H_2O or $E=MC^2$ Each character appears to be squeezed into the upper half of the line when you select superscript, or into the lower half of the line when you select subscript

Example.

To type superscript/subscript characters:

1 Press CTRL + Q (SUPER) to type superscript characters. The ↑ mark appears in the status area beside the pitch setting (10↑, 12↑ or PS↑).
or
Press CTRL + W (SUB) to type subscript characters. The ↓ mark appears in the status area beside the pitch setting (10↓, 12↓ or PS↓).

2. Type the text.

3 Press either CTRL + Q (SUPER) or CTRL + W (SUB) to terminate the superscript/subscript function. The ↑ or ↓ mark in the status area disappears. Pressing ←], ↑, →, or CTRL + ↵ (←) also terminates this function.

To change typed text into superscript or subscript:

1 Position the cursor on the first character to be changed.

2. Clear the insert function when it has been activated.

3 Press CTRL + Q (SUPER) for superscript or CTRL + W (SUB) for subscript.

The character at the cursor position changes to a superscript or subscript. Press and hold this key combination to change more characters to the right of the cursor.

To change superscript or subscript characters to regular text:

1 Position the cursor on the first character of the superscript or subscript text that you want to change.

When you move the cursor to superscript or subscript text, the ↑ or ↓ mark automatically appears in the status area.

2 Clear the insert function when it has been activated.

3 Press either CTRL + Q (SUPER) or CTRL + W (SUB). The character at the cursor position returns to regular type. Press and hold this key combination to change more characters to the right of the cursor back to regular type.

Note: You can use the Marking a text block function to change the marked range of text into superscript or subscript, and vice versa. Mark the text first and press CTRL + Q (SUPER) or CTRL + W (SUB) Clear the marking after changing the text See "Marking a text block" in the "Functions 3 (Editing)" chapter.

Expanded typing

This function makes characters expand horizontally

Example:

To select expanded type:

1 Press CTRL + Z (EXPAND) at the position where you want to begin the expanded typing An E appears in the status area beside the pitch setting (10 E, 12 E or PS E)

2 Type the text Each character appears on the screen as a expanded character

3 To terminate the expanded typing, press CTRL + Z (EXPAND, again Pressing → , ↑ ↓ , or CTRL + ↵ (←) also terminates this function

To change typed text into expanded characters:

1 Position the cursor at the first character in the text that you want to change to the expanded characters.

2. Clear the insert function when it has been activated.

3 Press CTRL + Z (EXPAND) The character at the cursor position changes to a expanded character and the cursor moves to the next character Press and hold this key combination to change characters to the right of the cursor

4 Press ALT + 9 (REFORM to fit the text between the margins, if the line expands beyond the right margin.

To change the expanded text back to regular type:

1 Position the cursor on the first character of the expanded text to be changed back to regular type

When you move the cursor to the expanded text, an E automatically appears in the status area.

2 Clear the insert function when it has been activated.

3 Press [CTRL] + [Z] EXPAND) The expanded character at the cursor position returns to regular type and the cursor moves to the next character Press and hold this key combination to change characters to the right of the cursor

Note: You can use the Marking a text block function to change the marked range of text into expanded characters, and vice versa. Mark the text first and press [CTRL] + [Z] (EXPAND). Clear the marking after changing See "Marking a text block" in the "Functions 3 (Editing)" chapter.

Caps lock

This function enables you to succeedingly type upper-case characters

1. Press [CAPS] CAPS is highlighted in the status area.

2 Type the text Each alphabetical character (letter) appears in upper case Numbers and symbols appear as usual

To type any lower-case alphabetic characters or a symbol that is on the upper left corner of a key top while using caps lock, press and hold [SHIFT] Then, press the desired key.

3 To clear the caps lock, press [CAPS] again CAPS disappears from the status area

Euro characters

Euro characters are accented characters used in many European languages. Your Notebook provides 64 such characters for use with such languages.

Selecting Euro characters from a list:

1. With the cursor located at the point where you want to type the Euro character, press CTRL + = (EURO CHAR). The Euro character selection screen appears.

2. Using the ↑, ↓, →, and ← keys, move the cursor in the list to the character that you want to use.
3. Press the ␣ key to place the selected character in the document text.

Using key allocation:

As an alternative to the Euro character selection list, you can input Euro characters directly from the keyboard by pressing the ALT key in combination with letter keys from A to Z. You can also change how the characters are allocated to the ALT key combinations in whatever manner best suits your typing needs. Change the allocations as follows:

1. Press CTRL + = (EURO CHAR) to display the Euro character selection screen.

2 Switch to the key allocation mode by pressing the TAB key. The screen shows the characters that are allocated to keys from ALT + A to ALT + Z. You can change these a locations as desired.

3 Using the ↑, ↓, →, and ← keys, move the dark bar in the list to the key comb.nat on whose al.ocat.on you want to change, then press ↵. The 64 Euro characters then appear in a w ndow at the r.g.t s.de of the screen.

4. Using the ↑, ↓, →, and ← keys, move the text cursor to the character that you want to allocate to the ALT key combination that you selected in step 3, then press ↵. The character then appears to the right of that key combination on the left side of the screen.

   Repeat steps 3 and 4 as many times as necessary to allocate other characters.

5 Press the CAN key to return to the Edit Text screen. Now you type the allocated characters using the ALT key combinations.

Overlay (compound characters)

This function combines characters to form another symbols

Example:

1. Type one character.
2. Press CTRL + _ (OVERLAY) The cursor moves back to the first character
3. Type the other character Both characters are combined at the same position

Vertical line

You can easily type a long vertical line when single line spacing is selected

Example:

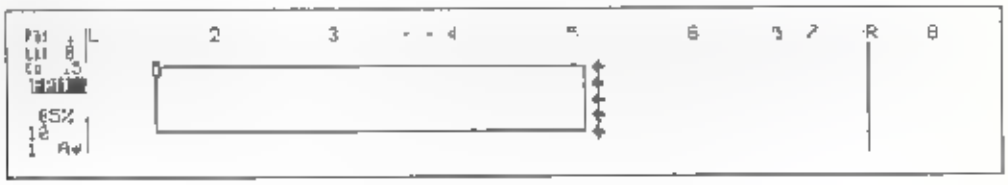
1. Position the cursor at the point where you want to start a vertical line
2. Press CTRL + V (V LINE) A short vertical line appears. The cursor moves one line below the vertical line Press and hold this key combination to extend the vertical line downward

   If the line spacing is set to 1½ or 2, it becomes a broken line.

Framing

This function allows you to make frames by drawing vertical and horizontal lines.

Example



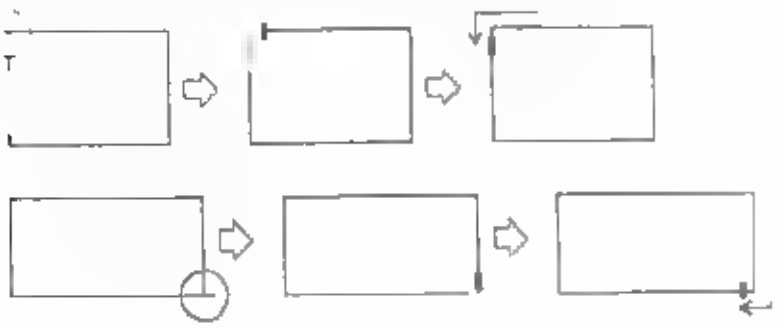
1. Press CTRL + 9 (FRAMING). FRM is highlighted in the status area, and the cursor on the screen changes from " ■ " to " ▮ "
2. Hold down CTRL and any of the cursor keys (←, →, ↑, or ↓). The cursor moves and lines appear on the screen in the direction of cursor movement. The left and right cursor keys create horizontal lines, and the up and down cursor keys create vertical lines.

   To delete a line, hold down ALT and retrace the line with ←, →, ↑, or ↓.

   To move the cursor without drawing or erasing lines, press the cursor keys by themselves.
3. To end framing operation, press any key other than the cursor keys, CTRL, and ALT.

Note. If a horizontal or vertical line projects out from a corner, you can mend the corner as follows. (This mending method can be used on any corner.)

a) Delete the excess line using ALT + cursor keys.
b) Move the cursor to a horizontal or vertical line near the corner.
c) Retrace the corner using CTRL + cursor keys.

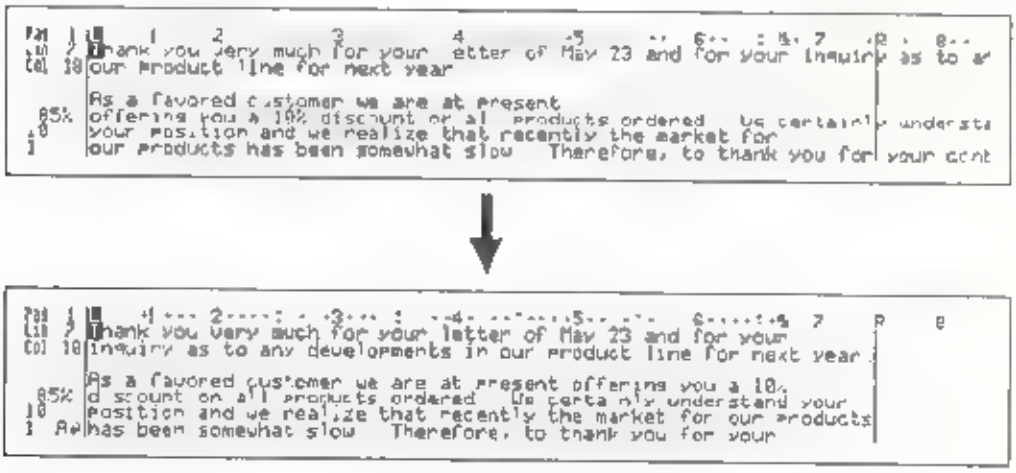


FUNCTIONS 3 (EDITINGS)

Reformatting text

The text may look ragged after you edit it. Reformat the text to fit it between the margins.

Example:



1. Position the cursor anywhere in the first line of the paragraph to be reformatted.
2. Press ALT + 9 (REFORM). The text in the paragraph is reformatted between the left and right margins. The cursor moves to the top of the next paragraph.

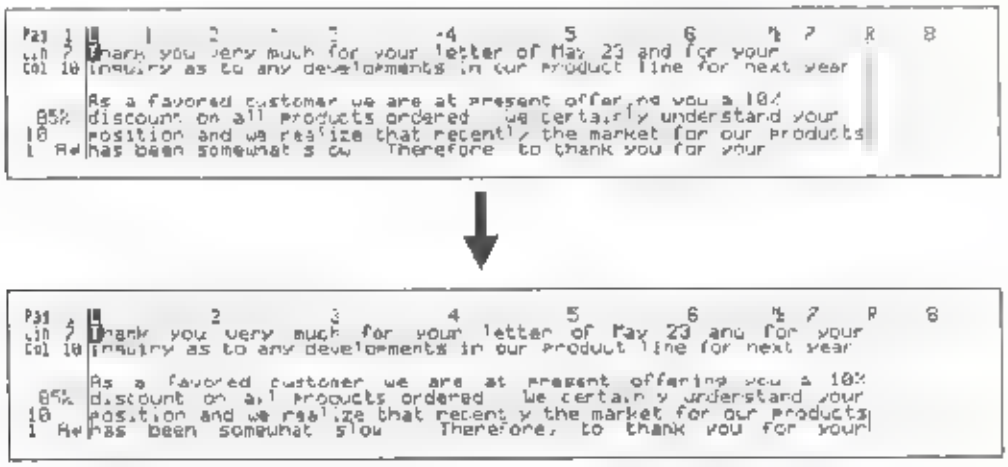
   A line which has been set to be indented is reformatted between the indent position and the right margin.

Note: You can use the Marking a text block function to reformat a marked range of text. Mark the text first and press ALT + 9 (REFORM). See "Marking a text block."

Justification

This function evenly positions the words in a line between the left and right margins.

Example:



1. Position the cursor anywhere on the first line of the paragraph to be justified.
2. Press ALT + 0 (JUSTIFY). The right ends of all lines in the paragraph align at the right margin.

   The last line in the paragraph is not justified.

   A line which has been set to be indented is justified between the indent position and the right margin.

Note. To unjustify the paragraph, position the cursor on the first line of the paragraph to be unjustified and press ALT + 9 (REFORM)

You can use the Marking a text block function to justify a marked range of text. Mark the text first and press ALT + 0 (JUSTIFY). See "Marking a text block."

Search and replace

To search for a word:

1 Position the cursor at the point in the document where you want to start searching text.

2 Press [CTRL] + [S] (SEARCH). The window shown below appears.

3 Type the word or phrase to be located. You can type a maximum of 16 characters, including spaces.

4 Press [↵]. The cursor stops at the first occurrence of the word or phrase. The window disappears.

5 If necessary, make any corrections in the text.

6 Press [CTRL] + [A] (NEXT) to search for the next occurrence of the word or phrase.

Note: The specified word or phrase to be searched for remains until you type another. You can search for this word or phrase as many times as you want by pressing [CTRL] + [A] (NEXT).

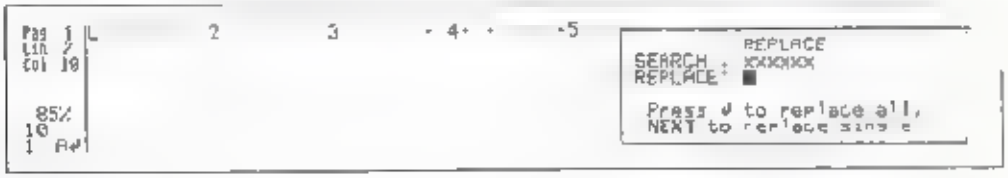
To replace all occurrences of a word:

1 Position the cursor at the point in the document where you want to start searching for the text.

2 Press [CTRL] + [D] (REPLACE). The window shown below appears.

3 Type the word or phrase to be located. You can type a maximum of 16 characters, including spaces.

4. Press ↵. The window changes as shown below.



5 Type the new word or phrase to replace the searched text. You can type a maximum of 16 characters, including spaces.

6. Press ↵. All occurrences of the searched text are replaced with the new text.

To search and replace one word at a time:

1. Position the cursor at the point in the document where you want to start searching for the text.

2 Press CTRL + D (REPLACE). The window shown below appears.

3 Type the word or phrase to be located. You can type a maximum of 16 characters, including spaces.

4 Press ↵. The window changes as shown below.

5 Type the new word or phrase to replace the searched text. You can type a maximum of 16 characters, including spaces.

6 Press [CTRL] + [A] (NEXT). REPL is highlighted in the status area. The cursor stops at the first occurrence of the searched text.

7. Press [↵] to replace it with the new text.

   To leave the searched text unchanged, press [CTRL] + [A] (NEXT).

Marking a text block

This function identifies an entire section or block of text for editing.

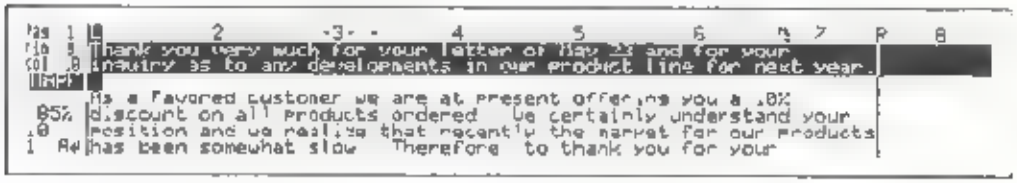
1 Position the cursor at the beginning or the end of text to be marked.

2 Press [ALT] + [1] (MARK). MARK is highlighted in the status area.

3 Move the cursor to the other end of the text that you want to block.

   Each character between the two cursor positions is highlighted to show that it has been marked.

   Example:



   Moving the cursor vertically marks the text a line at a time.

   You can use [CTRL] + [↑] (BEGIN), [CTRL] + [↓] (END), [ALT] + [↑] (PREV P) or [ALT] + [↓] (NEXT P) to quickly mark the text.

   Move the cursor in the opposite direction to unmark the text or press [ALT] + [1] (MARK) again to cancel the marking.

4 After marking the text, press any function key you want.

   For copying, moving, or deleting of text block, see the following sections.

For centering, right margin flush, reformatting, or justification of text block:

a) Mark the text.

b) Press CTRL + C (CENTER) CTRL + R (R FLUSH), ALT + 9 (REFORM), or ALT + 0 (JUSTIFY). Marked text will be changed according to the function you designated.

For underlining, boldface characters, superscript/subscript, expand typing, pitch/line space changing of text block:

a) Mark the text.

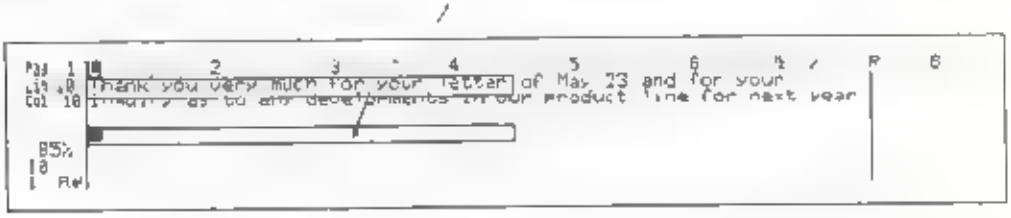
b) Press CTRL + X (XXX), CTRL + B (BOLD), CTRL + Q (SUPER), CTRL + W (SUB), CTRL + Z (EXPAND), CTRL + 1 (PITCH), or CTRL + 2 (LINE SPACE). Marked text will be changed according to the function you designated.

c) Press ALT + 1 (MARK) again to clear the marking

Copying a text block

This function lets you copy a block of text and duplicate that text at another point in the document.

Example



1 Mark the text that you want to copy, as described in the marking a text block function

2 Press ALT + 2 (COPY). The block of text enters the copy/move memory MARK disappears from the status area. The highlighted text returns to normal

3 Position the cursor at the point in the document where you want to insert the block of text.

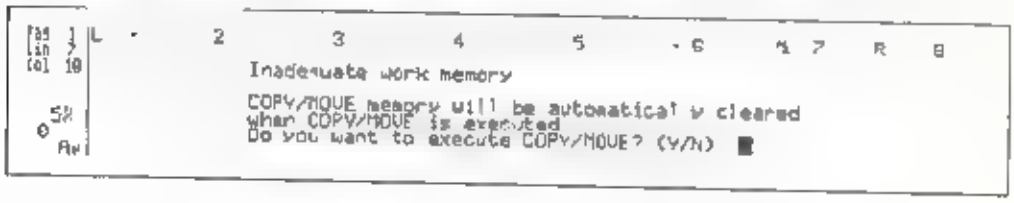
4. Press [ALT] + [2] (COPY). The block of text is inserted at the point designated by the cursor

5 Reformat the text using [ALT] + [9] (REFORM) if necessary

Note: You can copy the selected text in more than one location by pressing [ALT] + [2] (COPY) because the text in the copy/move memory stays there until you copy or move another section of text (or clear the work memory)

You can store a maximum of 12,000 characters at a time in the copy/move memory, which occupies a part of the work memory When the remaining memory is too small to store the marked text the message Inadequate COPY/MOVE memory appears and the copy function is canceled.

If the remaining work memory is sufficient to store the marked text, but not enough to insert or copy it, the following message appears



For example, if space for 1,000 characters remains in the work memory and you store 700 characters of text in the copy/move memory, the remaining 300 characters of space available in the work memory is not enough to insert 700 characters of text Therefore the warning message appears.

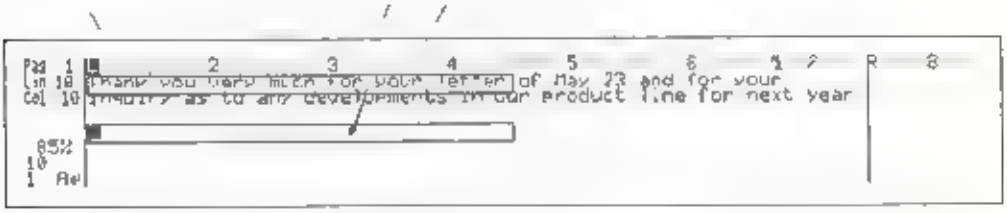
Press [Y] to execute copying. The copy/move memory is cleared to provide room for the text being inserted

Press [N] to cancel the copy function The contents of the copy/move memory are not deleted.

Moving a text block

This function removes a marked block of text from one location and inserts it at another point in the document designated by the cursor.

Example:



1 Mark the text you want to move, as described in the marking a text block function

2 Press [ALT] + [3] (MOVE) The marked text is removed from its original position and enters the copy/move memory. MARK disappears from the status area

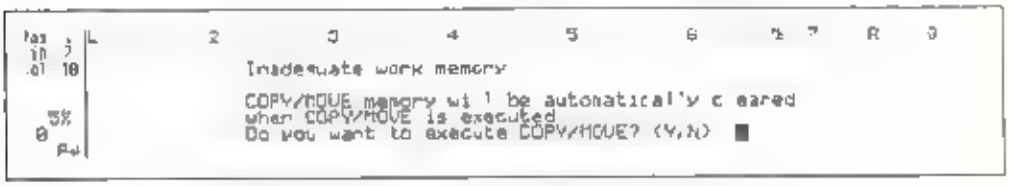
3 Position the cursor at the point in the document where you want to insert the block of text

4 Press [ALT] + [3] (MOVE) The block of text is inserted at the point designated by the cursor

5 Reformat the text using [ALT] + [9] (REFORM, if necessary

Note: You can insert the selected text in more than one location by pressing [ALT] + [3] (MOVE) because the text in the copy/move memory stays there until you copy or move another section of text (or clear the work memory)

When the remaining work memory is not enough to insert the text stored in the copy/move memory, the following message appears



At first, you might think that his message is a mistake - all you want to do is move text from one place to another, so there should be no change in the amount of the work memory space used. However, please remember that the contents of the copy/move memory are retained, even after you insert the text.

For example, if you want to move 1,000 characters of text, you must first store that text in the copy/move memory as described in steps 1 and 2 above. When you insert the stored text, the 1,000 characters of text are put into the text file, but it keeps the same amount of text in the copy/move memory. Thus, an additional 1,000 characters of space in the work memory is required. If the current memory space is less than 1,000 characters, the warning message appears.

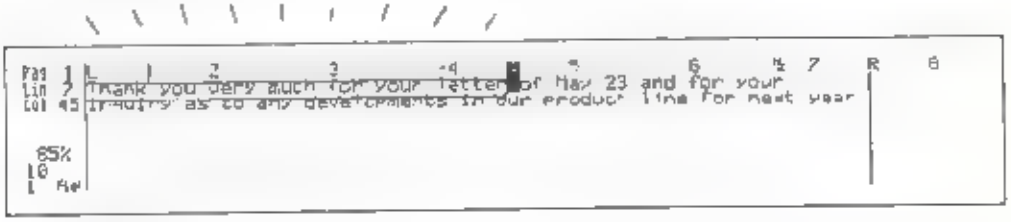
Press [Y] to execute moving. The copy/move memory is cleared to provide room for the text being inserted.

Press [N] to cancel the move function. The contents of the copy memory are not deleted.

Deleting a text block

This function deletes a marked block of text

Example.



1 Mark the text that you want to delete as described in the marking a text block function.

2 Press ALT + 4 (DELETE) The marked text disappears MARK disappears from the status area.

3. Reformat the text using ALT + 9 (REFORM) if necessary

Note: You can retrieve the last deleted text block by pressing CTRL + BACK (UNDEL) before any other operation.

FUNCTIONS 4 (SPELL CHECK, GRAMMAR CHECK, THESAURUS)

How spell check works

This Notebook is equipped with two dictionaries for spell check: a 77,000-word main dictionary and a 300-word user dictionary. You can store any special words, terms or names in the user dictionary.

Spell check compares each word with the words in both dictionaries, and detects any words which are not in either dictionary.

Spell check regards a group of letters as a word if followed by SPACE, →, ↵, TAB, a number or a non-letter symbol (except a single period or apostrophe).

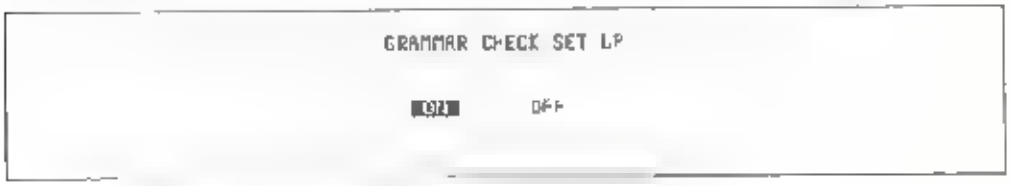
Spell check detects proper nouns that are not capitalized. For example, chicago, london, washington.

Spell check detects abbreviations which do not end with a period. For example, Mr, bldg, etc.

You can also turn the grammer check function on or off. This setting is made with the DICTIONARY selection in the OTHERS menu.

1. Press the WP key, and the Word Processor menu appears.
2. Press the 5 key.
   or
   Using the → key, move the dark bar to OTHERS and press ↵.

3. Press the [3] key.
   or
   Using the [←] and [→] keys, move the dark bar to DICTIONARY and press [↵].



   Select the main dictionary using the [←] and [→] keys. Then press [↵].

How grammar check works

Your Notebook has several check points to detect the grammatical errors on spacing, capitalization, and punctuations throughout your document. When an error is found, the message tells you which type of error you made.

Beginning error?

There is an invalid symbol at the beginning of the sentence.
Delete the incorrect character.

```
)Thank you very much for your letter   - incorrect
Thank you very much for your letter    - correct
```

Capitalization error?

The first character of sentence is not capitalized.
Change the first character to a capital letter.

```
we are not standing still - incorrect
We are not standing still - correct
```

Double word?

The same word is typed twice in a row.
Delete e ther one.

```
in our product line line for   - incorrect
in our product line for        - correct
```

Punctuation error?

There is unreasonable usage of successive punctuation marks
Delete the unnecessary punctuation or change the incorrect punctuation mark

```
We wait for your reply.!   - incorrect
We wait for your reply!    - correct
```

Quotation error?

There is unreasonable punctuation after the quotation mark
Delete the unnecessary punctuation.

```
")Meeting the New Market"  - incorrect
"Meeting the New Market"   - correct
```

Spacing error?

a) There is no space after comma or semi colon.
Insert a space after the comma or semi colon

```
for your continued patronage,we have    - incorrect
for your continued patronage, we have   - correct
```

b) There are two space between two words (except at the end of .he sentence
Remove the extra space.

```
The  market will continually grow   - incorrect
The market will continually grow    - correct
```

c) The number of spaces before and after a dash is not correct.
Space once both before and after the dash, or do not space both before and after the dash.

```
It is --as many tools are    - incorrect
It is -- as many tools are   - correct
It is--as many tools are     - correct
```

d) The number of spaces before and after a colon is not correct.
Do not space before the colon and space once or more after the colon.

```
Example :Los Angeles, Tokyo - incorrect
Example: Los Angeles, Tokyo - correct
```

Spell check and grammar check throughout a text

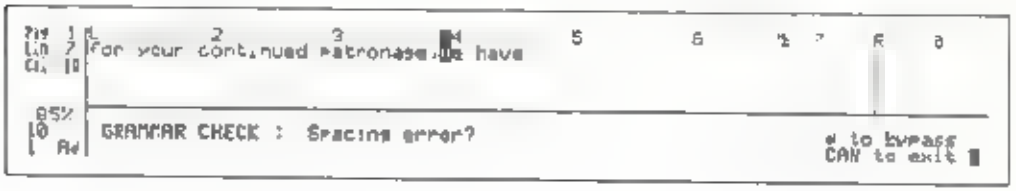
You can perform the spell check and grammar check together throughout the document you have typed.

1 Position the cursor at the point in the text where you want begin the spe.. and grammar check

2 Press ALT + 5 (SPELL TXT) to begin The window shown below appears at the bottom of the screen

3 When it finds a word which is not in either dictionary (ma n or user dictionary), the cursor pauses at that word The Spell Check window appears. Proceed to the step 4.

When a grammatical error is found, the cursor pauses at that position The Grammar Check window appears. Proceed to the step 5.



4 If the Spell Check window appears, you may select one operation from four options on the spell-checked word.

a) Press [1] for suggested words. The window displays suggested words that are similar in spelling to the checked word. Press [↓] to display more words.
The message "NO SUGGEST ON" appears for a few seconds when there is no word found.

Position the cursor at the desired word by pressing [→] or [←]. Press [↵] to replace the previous word with the selected word from the dictionary.

b) Press [2] to add the word to the user dictionary. If the user dictionary is full, the word with the lowest usage frequency is automatically deleted from the user dictionary to make room for new entries.

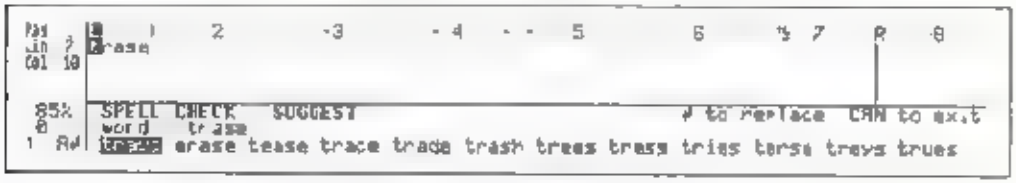
c) Press [3] to retype the word.

Type the correct word and then press [↵]. The word is replaced with the correct word.

d) Press [↵] to leave the word unchanged.

e) Press [9] to search for words with similar pronunciations. A list is displayed of words with pronunciations similar to that of your selected word.

Additional words can be displayed by pressing [↓]



Position the cursor at the desired word by pressing [→] or [←] Press [↵] to replace the previous word with the selected word from the dictionary

Note: It takes a moment for the list of words to appear on the screen.

5 When the Grammar Check window appears, the message appears in the window to inform you which grammatical error you made. See "How Grammar Check Works".

To correct the error, first press [CAN] Press [BACK] to remove unnecessary characters/spaces And add the correct character/space Then press [ALT] + [5] (SPELL TXT) again to resume checking.
or
Press [↵] to leave it unchanged and resume checking

6. Repeat step 4 and 5 for each word checked.

7 The spell and grammar check turns off automatically after checking all words to the end of document

Checking spelling as you type a word

1 Press [ALT] + [6] (SPELL WD) to turn on the spell check function.

A buzzer sounds A highlighted S appears in the status area beside the pitch setting.

2 Type text as usual If you type a word not found in either dictionary, a buzzer sounds at the end of that word.

3 Correct the word by pressing [BACK] or [ALT] + [←] (WORD DEL)

Note. You can use the dictionaries for suggested words And, you can add words to the user dictionary. (Refer to the following section.)

4 To turn off the spell check, press ALT + 6 (SPELL WD) again. The highlighted S disappears from the status area.

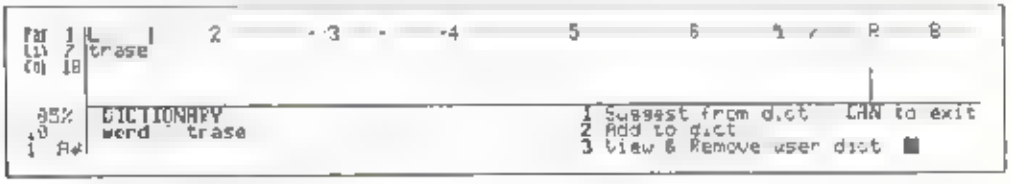
Using the dictionaries

You can use the dictionaries to display some suggested words as you type. You can add a word to the user dictionary or view and remove the word in the user dictionary.

To display suggested words or to add a word to the user dictionary:

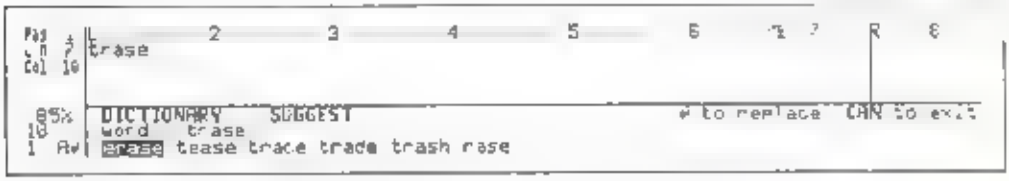
1 Press ALT + 7 (DICT) while the cursor is positioned on the desired word, or the space immediately following the word.

2. The window shown below appears at the bottom of the screen.



3 a) Press 1 for suggested words. The window displays suggested words that are similar in spelling to the word you selected. Press ↓ to display more words.

The message *NO SUGGESTION* appears for a few seconds when there is no word found.



Position the cursor on the desired word by pressing → or ←. Press ↵ to replace the previous word with the selected word from the dictionary.

b) Press [2] to add the word to the user dictionary

If the user dictionary is full, the word with the lowest usage frequency is automatically deleted from the user dictionary to make room for new entries.

c) Press [9] to search for words with similar pronunciations. A list is displayed of words with pronunciations similar to that of your selected word

Additional words can be displayed by pressing [↓]

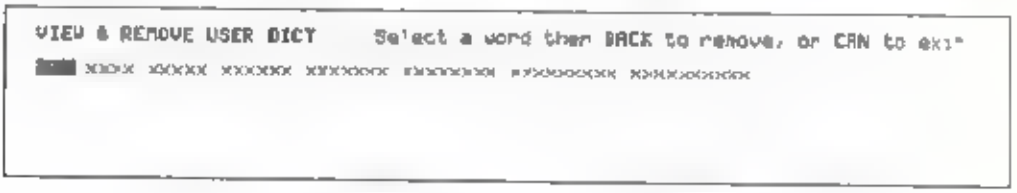
Position the cursor at the desired word by pressing [→] or [←]. Press [↵] to replace the previous word with the selected word from the dictionary.

Note: It takes a moment for the list of words to appear on the screen

To view and remove the words in the user dictionary:

1. Press [ALT] + [7] (DICT) at any position.
2. The window shown below appears at the bottom of the screen

3. Press [3]. The words in the user dictionary appears in alphabetical order



4 Position the dark bar on the word to be removed by pressing [←], [→], [↑], or [↓].

5. Press [BACK] to remove a word

6. Press [CAN] to exit.

Note: The lithium battery protects the words in the user dictionary for about five years, even if you turn off the power switch. If [▪] appears, the lithium battery has been nearly drained. Please contact your nearest authorized service center for assistance before you lose the contents of the user dictionary

Thesaurus

This function offers you some synonyms for a word along with its definitions. It helps you to find any other words which makes your document more clear or more impressive.

1 Press [ALT] + [8] (THES) while the cursor is positioned on the query word, or the space immediately following the word.

2 The Thesaurus screen appears. It displays the query word and its definitions, along with the appropriate part of speech for each definition.

If there are more than 6 definitions for the query word, press [↓] to display the following definitions.

The message *NO SYNONYM IN DICTIONARY* appears for a few seconds when there is no synonym of your query word.

3 Select one definition under which you want to see the synonyms, and type the number of it.

4 Several synonyms appear under the definition you selected. Other definitions automatically disappear.

5. Position the cursor at the desired synonym by pressing [→] or [←]. Press [↵] to replace the current word with the selected synonym.

Note: While the synonyms are appearing on the display, press [↓] to show the synonyms of the next definition or press [↑] to show the synonyms of the previous definition.

If you do not find a suitable synonym, press [CAN] to resume the definition lines. Press [CAN] to exit the thesaurus function.

MAINTENANCE

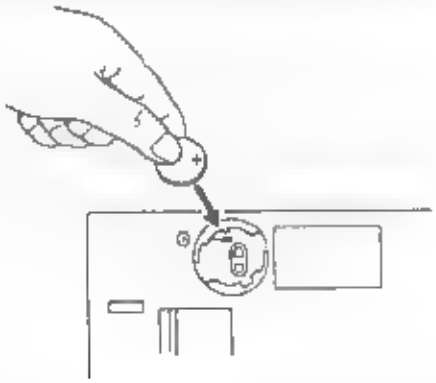
Changing Batteries

Lithium battery:

The lithium battery preserves files stored in the Notebook's built-in memory. Appearance of the following message on the LCD screen indicates that the lithium battery is almost exhausted.

To avoid losing files, you should replace the lithium battery as soon as possible after this message appears.

The lithium battery used in the Notebook is a type CR2032. You can obtain this battery in most camera shops. Replace it as shown in the illustration below.



Dry cell batteries:

The Notebook runs off of four LR6 AA cells (1.5V). Four new dry cells will power the Notebook for about 30 operating hours. Appearance of the following message on the LCD screen indicates that the dry cells are almost exhausted.

When this message appears, replace the dry cells with four new LR6 AA batteries.

Card battery:

The card battery preserves files stored in card memory.

Appearance of the following message on the LCD screen indicates that the card battery is almost exhausted.

To avoid losing files you should replace the card battery as soon as possible after this message appears.

Note: The card battery should only be replaced while the card is inserted into the Notebook with the Notebook's power on. This is because the Notebook provides power to preserve the contents of card memory while you are replacing the battery. If you remove the card battery without inserting the card into the Notebook or with the Notebook's power turned off, you will lose all files in card memory. When the auto power-off function is enabled, remember that you will have to press some key on the Notebook periodically to prevent the power from being turned off automatically. Take care to guard against loss of files while changing the card battery.

Maintenance

Keep the unit dry If it does ge wet, wipe it dry immediate y L.qu.ds can contain minerals that can corrode the electronic circuits

Handle the unit gently and carefu l y Dropping it can damage circuit board and cases and can cause the product to work improperly

Use and store the un.t only .n normal temperature environments Ex reme temperatures can shorten the .ife of electronic devices and d.stort or ne.t p.astic parts.

Keep ne unit away from dust and dirt, which can cause premature wear of parts.

Wipe the un t with a dampened cloth occas onal.y to keep it look.ng new Do no use harsh chemicals, cleaning solvents, or str.ng detergents to c lean the Notebook

Service

We recommend that the unit be serviced at least once a year by an authorized service technician.

If the unit fails to function or does not function properly, first examine the check points as follows. If the unit still does not work properly, contact an authorized service center.

Are the batteries properly installed?

Is the unit plugged into a live socket?

Is the unit turned on?

Has the packing material been removed?

Is the display contrast well-adjusted?

Is the proper card memory being used?

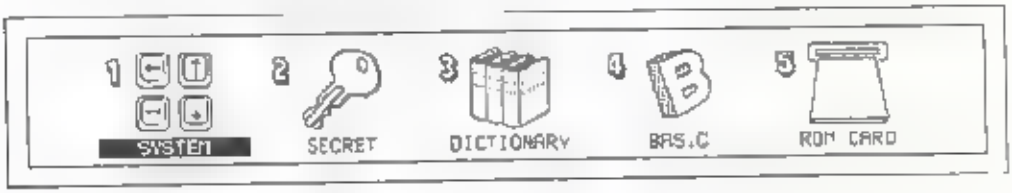
ABOUT BASIC

This BASIC (Beginner's All-purpose Symbolic Instruction Code) command language provided with the Notebook generally conforms to the functionality of IBM's BASIC, but the command set is somewhat abbreviated and some functions have been been modified to provide maximum utility in conjunction with other Notebook features. This BASIC has been prepared completely independently of and without any assistance from IBM. Please note that BASIC programs prepared on other computers cannot be used on the Notebook.

This chapter explains the commands and functions of the Notebook's BASIC and explains how to create and execute programs.

Starting Up BASIC

1. Turn on the power.
2. Write a BASIC program using the Notebook's word processing function. When writing the program, please follow the rules explained later in this chapter. When naming the program file, add the extension ".BAS" to the file name to make it recognizable as a BASIC program.
3. From the edit screen, press [WP] to switch to the WORD PROCESSOR menu.
4. Press [6]
   or
   Move the dark bar to OTHERS and press [↵]



5. Press [4]
   or
   Using the [→] key, move the dark bar to BASIC and press [↵]
6. The BASIC screen appears and the Notebook enters the BASIC mode.
7. Using the [↑] and [↓] keys, move the dark bar to the file to be executed.
8. Press the [↵] key to execute the file.
9. To terminate execution of a program, press the [CAN] key.

Operation in the BASIC Mode

Programming:

When writing BASIC programs, start each line with a line number, then type statements conforming to the BASIC syntax rules. After writing the program, store it in memory as a program.

After switching to the BASIC mode, select this program file and press ↵. Program lines are executed in ascending order of their line numbers, or in the order in which specified within the program if a command specifies execution of a particular line.

Syntax of BASIC

The program file created in the word processor mode must contain only statements that are executable in BASIC. (See the descriptions in the next section for the meanings of the various statements.) Since programs can be stored as files, you can have them available for use at any time.

Statements:

The term "statement" refers a command, i.e., to a name that indicates a command in the BASIC language and information (parameters) acted on by the command

PRINT	1234
Command name	Information passed to command (parameter)

Statement or command

Line:

A program consists of a collection of executable program lines. Lines are the unit in which programs are stored in memory.
A program line includes at least one statement. However, by delimiting statements with colons (:), you can include multiple statements on a line, making a multi-statement.

When writing the program, you can use any integers from 0 to 65529 as line numbers at the beginning of each line. As the program is stored in memory the lines are stored in ascending line number order.

Symbols:

In addition to the characters and symbols making up commands and their parameters, several symbols have special significance in the description of BASIC statements. These are as follows.

:	colon	Delimits statements from one another in a multi statement line
,	comma	Used to delimit data items in command parameters.
;	semi colon	Used to delimit data items in the command parameters of an output statement.
'	apostrophe	An alternate form of the REM (REMark) command.
?	question mark	An alternate form of the PRINT command.
␣	space	Immediately follows every command name. Otherwise, ignored except in text strings.

Constants:

- Character string constants
  A string constant is a character string (character data) that is enclosed in double quotation marks ("). String constants cannot be used with arithmethic operations.
- Numeric constants
  Numeric data that is used in arithmetic operations. The term refers to decimal and hexadecimal integer constants, and also to real number constants.

Variables:

Variables can be thought of as holders within a program of data of a particular type. Numeric variables initially contain the value 0, and string variables initially contain a null string. With string variables, a dollar sign ($) is added to the variable name as a type declarator.

A variable name consists of a string of letters and numerals of arbitrary length however the first character must be a letter. Although the name may be of any length, note that BASIC regards only the first five characters as significan

Operators:

BASIC provides three types of operators for use in numeric expressions arithmetic operators relational operators, and logical operators When more than one type of operator is included in an expression, the arithmetic operators are evaluated first, followed by the relational operators, then by the logical operators

- Arithmetic operators
  The following special symbols are used as arithmetic operators The operators are listed in the order of their priority

Operator	Example	Operation
^	X ^ Y	Exponentiation
-	- X	Negative sign
*, /	X * Y	Multiplication
	X / Y	Division
\	X \ Y	Integer division
MOD	X MOD Y	Modulo division
+, -	X + Y	Addition
	X - Y	Subtraction

Note The + operator is also used to concatenate character strings

- Relational operators
  Relational operators are used to compare two values The two values compared must both be either numeric values of character strings The result of comparison is either -1 (TRUE or 0 (FALSE) The relational operators are as follows

Operator	Example	Operation
=	X = Y	Equality
<>, ><	X <> Y, X >< Y	Inequality
<	X < Y	Less than
>	X > Y	Greater than
<=, =<	X <= Y, X =< Y	Less than or equal to
>=, =>	X >= Y, X => Y	Greater than or equal to

Rules governing comparison of strings are as follows.

1 A character that precedes another character in the character sequence is regarded as being the lesser character.

2 In the character sequence, characters are arranged alphabetically, with numerals first, followed by uppercase letters, then by lowercase letters.

3 Individual characters of a character string are compared in terms of their internal codes. (The internal codes used for comparison are hexadecimal representations of continuous internal code. The characters having the lower code are regarded as being less than characters having a higher code.)

4 When two character strings are of unequal length and the characters of the shorter string are identical to the first characters of the longer string, the shorter string is regarded as being less than the longer one.

- Logical operators
  Logical operators are used for performing Boolean operations on numeric values. As with relational operators, logical operators check the relationship between two or more values and return TRUE or FALSE. Values are compared on a bit by bit basis, and a result of 0 or 1 is returned for each bit. In ascending order, the priority of the logical operators is as follows.

Operator	Example	Operation
NOT	NOT X	Negation
AND	X AND Y	Logical product
OR	X OR Y	Logical sum
XOR	X XOR Y	Exclusive OR

Commands:

BASIC is a simple language formed of fixed command names. Programs can be formed by writing statements/commands using the command names of this language, making it possible for you to handle data in a wider variety of ways.

For details on the following commands, see the "Command Reference" section of this chapter.

Command name	Function	Page
BEEP	Sounds the buzzer.	151
CLEAR	Erases data.	151
CLOSE	Closes files.	151
CLS	Clears the screen.	152
COLOR	Specifies character attributes (such as underline, bold, and inverted)	152
DATA	Designates numeric and string data.	153
DIM	Declares array variables.	153
END	Ends program execution.	154
ERASE	Erases array variables.	154
FIELD	Defines fields in a file buffer.	154
FOR TO STEP	Repeats execution of commands between FOR and following NEXT.	155
GET	Fetches data into a file buffer from a file.	156
GOSUB	Calls a subroutine.	156
GOTO	Branches execution to a specified line.	157
IF THEN~ELSE	Makes decisions based on evaluation of an expression.	157
INPUT	Gets data from the keyboard.	158
INPUT#	Reads one line from a file.	158
KILL	Erases a file.	159
LET	Substitutes the value of an expression into a variable.	159
LINE	Draws a line or box.	160
LINE INPUT	Reads one line from the keyboard.	160
LINE INPUT#	Reads one line from a sequential file.	161
LOCATE	Moves the cursor to a specified position.	161
LPRINT	Outputs data to the printer.	162

Command name	Function	Page
LPRINT USING	Outputs character strings and numeric values to the printer	163
LSET	Sets data into random access file buffer and left justifies it in the field	165
MID$	Replaces part of a string variable with another string.	165
NAME	Changes the name of a file.	165
NEXT	Closes a FOR...NEXT loop.	166
ON...GOSUB	Branches to a subroutine.	166
ON...GOTO	Branches to a specified program line	166
OPEN	Opens a file	166
PRINT	Displays data on the screen.	162
PRINT USING	Displays data on the screen in a specified format	163
PRINT#	Writes data to a file	167
PRINT# USING	Outputs character strings or numerics to a file	163
PRESET	Erases a dot from the screen	167
PSET	Draws a dot on the screen.	168
PUT	Writes buffer data to a file.	169
READ	Reads string data or numerics from a DATA statement	169
REM	Designates a comment.	170
RESTORE	Specifies the first of a series of DATA statement lines to be read by READ statements.	170
RETURN	Ends a subroutine	171
RSET	Sets data into random access file buffer and right justifies it in the field.	165
SOUND	Outputs a tone.	171
STOP	Stops program execution.	171
SWAP	Exchanges the values of two variables	172
WRITE	Writes data to the screen	172
WRITE#	Writes data to a file	173

Functions:

Functions perform some operation on a specified value and return the result of that operation. The functions are as follows; for details, see the "Function Reference" section of this chapter.

Function name	Function	Page
ABS	Returns the absolute value of a number.	173
ASC	Returns the ASCII character code of a character.	173
ATN	Returns the arctangent of an angle.	173
CHR$	Returns the character corresponding to a specified character code	174
COS	Returns the cosine of an angle.	174
CSRLIN	Returns the number of the row currently containing the cursor	174
CVD	Converts a string of numeric characters in a FIELD statement variable into numeric data.	175
DATE$	Returns the date.	175
EOF	Checks for the end of file condition	176
EXP	Returns the value of e raised to a specified power	176
FIX	Truncates the fractional portion of a number and returns the integer portion.	177
FRE	Returns the number of bytes of unused memory.	177
HEX$	Returns the hexadecimal equivalent of a decimal number.	178
INKEY$	Reads a character from the keyboard	178
INPUT$	Reads characters from a file	178
INSTR	Searches a string for a sub-string and returns the position of the sub-string	179
INT	Converts a number to an integer	179
LEFT$	Returns a sub-string consisting of the specified number of characters from the left end of a string.	180
LEN	Returns the length of a string.	180
LOC	Returns the current position inside a file.	180
LOF	Returns the length of a file.	181
LOG	Returns the natural logarithm of a numeric value.	181

Function name	Function	Page
LPOS	Returns the position of the printer's print head	181
MID$	Returns a sub-string from with n a specif ed string	182
MKD$	Converts a numeric value to a string of numeric characters for storage in a FIELD variable.	182
POINT	Checks for a dot at a specified screen position	183
POS	Returns the number of the column conta.ning the cursor	183
RIGHT$	Returns a sub-string consis ing of the specified number of characters from the right end of a string.	83
RND	Generates a random number	184
SGN	Returns the s gn of a number	184
SIN	Returns the sine of an angle	85
SPACE$	Returns the specified number of space characters.	185
SPC	Outputs the specified number of space characters to the screen or printer.	185
SQR	Returns the square root of a number.	186
STR$	Converts a numeric expression into a character string	186
STRING$	Returns a str ng consisting of the spec fied number of a certain character.	186
TAB	Outputs spaces to the spec fied column	187
TAN	Returns the tangent of an angle	187
TIME$	Returns the time of the system clock.	188
VAL	Returns the numeric value corresponding to a string representation of a number.	188

Screen Control Commands (Single-character commands and command characters used together with ESC):

The screen control commands consist of single specific characters from the character set, and characters that are used in combination with the ESC character

The character set contains both displayable characters (codes from 32 to 223, or 20H to DFH) and control characters (codes from 0 to 31, or 00H to 1FH) Some screen control commands consist of single control characters, and others consist of the ESC code in combination with other characters For details on the screen control commands, see the "Screen Control Command Reference" section of this chapter.

Command name	Code	Function	Page
BEL	7 (07H)	Outputs a tone	89
BS	8 (08H)	Moves the cursor one column to the left.	89
HT	9 (09H)	Outputs a horizontal tab	89
LF	10 (0AH)	Makes a line feed	89
VT	11 (0BH)	Moves the cursor upward.	90
FF	12 (0CH)	Moves the cursor to the right	90
CR	13 (0DH)	Makes a carriage return	90
SUB	26 (1AH)	Clears the screen	90
ESC	27 (1BH)	Escape command word	91
RS	30 (1EH)	Moves the cursor to the home position.	91

Commands combining ESC:

Command name	Function	Page
CUP	Moves the cursor to the specified position	191
HVP	Moves the cursor to the specified horizontal/vertical position.	191
CUU	Moves the cursor upward by the specified number of rows	192
CUD	Moves the cursor downward by the specified number of rows.	192
CUF	Moves the cursor to the right by the specified number of columns.	192
CUB	Moves the cursor to the left by the specified number of columns.	192
PSCP	Stores the current position of the cursor.	193
PRCP	Restores the cursor to the stored position	93
ED	Erases a specified portion of the screen	93
EL	Erases a specified portion of the line containing the cursor.	194
IL	Inserts one or more lines ahead of the line containing the cursor.	194
DL	Deletes the specified number of lines starting with the line containing the cursor	194
SGR	Sets the display attributes	195
SM	Hides the cursor	195
RM	Redisplays the cursor	195

Special keys used with BASIC:

While running BASIC, you can use the CAN (cancel) key to abort execution of a program.

About the character set

Letters, numerals, and symbols that can be used with this Notebook are as listed in the following character set table. Internally, the Notebook handles characters as numeric codes. The allocation of characters to codes is predetermined.

The character set used in the Notebook is unique and does not conform to any specific standard. (Note that this same character set is used in the terminal mode.)

For details on the character set, see the "Character set" section in Appendix.

BASIC error messages

BASIC displays error messages when it encounters an unexecutable or uninterpretable command during the course of program execution. Since error messages have a number of meanings, when one appears, make sure of the cause before making changes, otherwise, you may destroy a program that has nothing wrong with it.

The error messages displayed by the Notebook are as follows:

Message	Meaning
NEXT without FOR	A NEXT statement was encountered without a corresponding FOR statement.
Syntax error	An error was detected in the syntax of a command.
RETURN without GOSUB	A RETURN statement was encountered without a corresponding GOSUB statement.
Out of data	A READ statement attempted to read data even though the end of the data area designated by DATA statements had been reached.
Illegal function call	An illegal call was made to a function.
Overflow	A value exceeded the maximum limits possible under BASIC.
Out of memory	An attempt was made to use more memory than was available.
Undefined line number	Reference was made to a non-existent line number.

Message	Meaning
Subscript out of range	A statement specified an array variable subscript that is outside of the range for which the array was defined by the DIM statement
Duplicate definition	An attempt was made to define an array using a name that was already in use.
Division by zero	An attempt was made to divide a value by zero
Type mismatch	An incorrect variable type was used.
String too long	The length of a string exceeded the maximum limit
Missing operand	A required parameter was not specified.
FIELD overflow	An attempt was made to define a random file record of excessive length
Bad file number	An invalid file number was specified.
File not found	An attempt was made to open or access a non-existent file
Bad file mode	A file access attempt was made in an illegal mode
File already open	An attempt was made to open a file that is already open
Device I/O error	An error occurred during input from or output to a device
File already exists	An attempt was made to change the name of a file to a name that is already in use
Disk full	Store memory is completely full
Input past end	An attempt was made to input data from a file even though the end of that file had already been reached.
Bad record number	An invalid record number was specified
Bad file name	An invalid file name was specified.
Too many files	There are too many files
Disk write protect	An attempt was made to write data to a memory card that is write protected
Disk not ready	An attempt was made to access a memory card even though the card was not functioning

Handling error messages

NEXT without FOR

CAUSE. A NEXT statement was encountered without a corresponding FOR statement.

REMEDY Check the program flow and ensure that every FOR statement has a corresponding NEXT s.atement.

Syntax error

CAUSE. An error was detected in the syntax of a command, or an illega word was specified as a command. A type mismatch was encountered when reading data into a variab e from a DATA statement by a READ statement.

REMEDY· Specify the command correctly. Check the READ and DATA statements and ensure that the data and variable types match

RETURN without GOSUB

CAUSE A RETURN statement was encountered without a corresponding GOSUB statement

REMEDY· This error occurs whenever a RETURN statement is encountered even though execution is not in a sub-routine called with a GOSUB statement. Check the program flow and ensure that RETURN is encountered only within called sub-rout.nes

Out of data

CAUSE A READ statement attempted to read data even though the end of the data area des.gnated by DATA statements had been reached

REMEDY. Adjust the number of data items designated by DATA to match the number of occurrences of the READ statement. Check the correspondence between READ and DATA statements, and ensure that any RESTORE statements are used correctly.

Illegal function call

CAUSE: An error was made in use of a command or function. The specified parameters exceeded the permissable range, or the result returned exceeded legal limits

- A negative value or zero was specified as the parameter of the LOG function
- A negative value was specified as the parameter of the SQR function
- An inappropriate value was specified for a parameter of MID$, LEFT$, RIGHT$, STRING$, SPACE$, INSTR, or ON~GOSUB

REMEDY: Check usage of commands and functions

Overflow

CAUSE: A value input or the value resulting from an expression exceeded the maximum limits possible under BASIC

REMEDY: Check values obtained for validity.

Out of memory

CAUSE: The program is too long, there are too many FOR~NEXT loops, GOSUB statements, or variables, or an expression is too complex.

REMEDY: Reorganize the program to make it shorter. Make the program easy to understand. Execute the CLEAR statement at the beginning of program execution.

Undefined line number

CAUSE: Reference was made to a non existent line number.

REMEDY: Check the line numbers and refer only to ones that are in existence

Subscript out of range

CAUSE A statement specified an array variable subscript that is outside of the range for which the array was defined by the DIM statement.

REMEDY Check the range of subscripts specified in DIM statements and the range of subscripts used in array variable references.

Duplicate definition

CAUSE An attempt was made to defined a array using a name that was already in use.

REMEDY Use a different array name. Erase the former array with the ERASE statement and redefine the array.

Division by zero

CAUSE An attempt was made to divide a value by zero, or to raise zero to a negative power.

REMEDY Ensure that 0 is never used as the divisor.

Type mismatch

CAUSE An attempt was made to substitute data into a variable of the wrong type, or an incorrect variable type was specified as the parameter of a function

REMEDY Verify use of correct variable types.

String too long

CAUSE The number of characters in a string variable exceeded 255 bytes.

REMEDY Divide the data between two variables.

Missing operand

CAUSE: A required parameter was not specified.

REMEDY: Check the command description and specify all required parameters.

FIELD overflow

CAUSE An attempt was made to specify a random file record length of more than 256 bytes.

REMEDY: Ensure that the total length of all fields in the record does not exceed 256 bytes.

Bad file number

CAUSE The file number specified exceeds the maximum number of files that can be open at one time.

REMEDY: Use a smaller file number.

File not found

CAUSE An attempt was made in a KILL, NAME, or OPEN statement to open or access a non-existent file.

REMEDY: Specify a valid file name.

Bad file mode

CAUSE An attempt was made to use PUT or GET with a sequential file, or an attempt was made to access a file that is not open

REMEDY Open the file with an OPEN statement before accessing it Use PUT and GET only with files opened for random access

File already open

CAUSE· An attempt was made to open a file that is already open.

REMEDY Close the file before reopening it

Device I/O error

CAUSE: An error occurred during input from or output to a device

REMEDY: Check the device condition and ensure that the device is ready to receive data.

File already exists

CAUSE: An attempt was made to change the name of a file to a name that is already in use

REMEDY: Rename the file using a different name. Or change the name of the other file so that the conflict no longer exists

Disk full

CAUSE: An attempt was made to output data to a file with PRINT# or PUT, but store memory space was insufficient to hold the data

REMEDY: Delete unnecessary files to make more memory available

Input past end

CAUSE: An attempt was made to read data from a file with INPUT# or GET even though all data had already been read from that file

REMEDY: Adjust the number of data reads from the file to the number of data items available. Check for the end of file using the EOF or LOF functions

Bad record number

CAUSE: An invalid record number was specified.

REMEDY: Specify a different record number.

Bad file name

CAUSE An invalid file name was specified in a file handling command such as KILL, NAME, or OPEN

REMEDY: Specify a valid file name.

Too many files

CAUSE An attempt was made to create a new file even though the directory is already full

REMEDY: Delete unnecessary files from store memory.

Disk write protect

CAUSE An attempt was made to write data to a memory card that is write protected.

REMEDY: Remove write protection from the memory card.

Disk not ready

CAUSE An attempt was made to access a memory card even though the card was not functioning.

REMEDY Properly insert a memory card in the memory card slot

Notes concerning syntax notation

Notational conventions used in the command reference, function reference, and screen control command reference are as follows. Please make sure you understand these conventions before reading the command descriptions.

Uppercase letters: Uppercase letters are keywords of BASIC, and must be written exactly as given.

< > : Items enclosed in angle brackets are to be specified by you.

[ ] : Items enclosed in square brackets may be omitted.

... : A string of dots indicates that iteration is possible.

| | : A pair of vertical bars indicates that you specify one of the two or more items indicated.

Except for the above, all other punctuation marks (commas, semi colons, hyphens, etc.) should be written exactly as shown.

Command reference

BEEP

Function:	Sounds the buzzer.
Syntax:	`BEEP`
Explanation:	Generates an 800 Hz tone with a duration of 0.25 second
Example	`0 BEEP`

CLEAR

Function	Clears all numeric variables to 0 and all string variables to null strings. Also sets the size of the memory area used for array variables.
Syntax:	`CLEAR [<array-variable-memory-size>]`
Explanation:	If the parameter is omitted, the array variable memory area is set to the default size (1024 bytes).
Note.	An Out of memory error results if the size specified exceeds the amount of available memory

CLOSE

Function:	Closes open files and terminates (closes) devices.
Syntax:	`CLOSE [,[#]<file-number>...]`
Explanation.	Closes the file to which the specified file number has been assigned. Several specific files can be closed at the same time by delimiting them with commas. If no file number is specified, all open files and devices are closed. Once a file has been closed, it cannot be accessed again until it has been opened again (with the OPEN command). Since CLOSE purges any unwritten data from the buffers, be sure to use it to close files when file access is completed.
See also	END, STOP

CLS

Function. Clears the screen

Syntax: `CLS`

Explanation Clears a.l characters and graphics from the screen.

COLOR

Function: Specifies character a.tributes (underline, bold, and inverted).

Syntax. `COLOR <character-attributes>`

Explanation: Character attributes are expressed in terms of a binary number from 000 to 111, which is specified in the command parameters as a value from 0 to 7. The character attributes are determined according to whether each position .n the binary number (the 2^0 place, the 2^1 place, and the 2^2 place) is 0 or 1.

Highest bit		Lowest bit
2^2	2^1	2^0
(inverse)	(bold)	(underline)

DATA

Function. Specifies numeric and string data to be read by READ commands

Syntax. `DATA <constant>[,<constant>...]`

Explanation: The DATA command is a non-executable command. and the line contain ng a DATA command must conta.n only one such command and no other commands or statements. As successive READ commands are executed, they read data from the DATA lines in ascend.ng line number order

Note Constants spec fied in a DATA line may be either character strings or numbers. If a character string is to include any commas or spaces, that string must be enclosed in double quotation marks (" ")

DIM

Function: Specifies the maximum subscript value of array variables and allocates memory to those array variables.

Syntax:
```
DIM <variable-name>,<maximum-subscript-value>
[,<maximum-subscript-value>...])
[,<variable-name> (<maximum-subscript-value>
[,<maximum-subscript-value>...])...]
```

Explanation: Sets the maximum subscript value of array variables and allocates memory to those array variables. When the DIM command is executed, all elements of arrays declared are set to either 0 (zero) or null strings.

Note: When an array is accessed, a Subscript out of range error results if any subscript specified exceeds the maximum specified for that element when the array was declared. Within a given program, a particular array can only be declared one time.

Example:
```
100 WRRMAX=2
110 DIM SIS(12),WRRS(WRRMAX,2)
120 DATA 26.5,37.8,29.80,9.9,&H800
130 DATA 7,18,55,12,5,43
140 FOR I=0 TO 12
150 READ SIS(I)
160 NEXT I
170 DATA ABC,DEFG,"A."
180 DATA "HI,JKLM",NOPQR,STU
190 DATA VWX YZ,AB,CDE
200 FOR I=0 TO 2
210 FOR J=0 TO 2
220 READ WRRS(I,J)
230 NEXT J,I
240 PRINT SIS(3) WRRS(2,0
```

END

Function: Ends program execution

Syntax: `END`

Explanation: Ends program execution and closes all open files. The END command can be included in a program in any number of locations necessary. Whether or not an END command is included, execution stops automatically when execution reaches the end of the program. When execution ends, all files are closed regardless of whether an END command is included in the program.

ERASE

Function: Erases the memory area allocated to the program's array variables.

Syntax: `ERASE <array-name>[,<array-name>...]`

Explanation: Use this command to erase arrays that are no longer required. This is a way to make more memory available when space is limited and an array is longer needed within the program.

Example.

```
100 CLEAR 10000:START=FRE(1)
110 DIM BIG(50,20):MIDDLE=FRE(1)
120 ERASE BIG
130 DIM BIG(10,5,:FINAL=FRE(1
140 PRINT START,MIDDLE,FINAL
```

FIELD

Function: Assigns space within a random access file buffer to variables

Syntax:

```
FIELD [#]<file-number>,<field-width> AS
<string-variable>[,<field-width> AS
<string-variable>...]
```

Explanation: This command is used to designate variables that are to be used within a program as the data area within a random access file buffer.

Example

```
100 OPEN "A:CUST" AS #1
110 FIELD 1, 8 AS CUSTNO$, 20 AS NAME$, 40 AS
ADDR$
120 LSET NAME$="ABCD"
130 LSET ADDR$="EFGHIJKL"
140 LSET CUSTNO$=MKD$(7850)
150 PUT 1,1
160 GET 1,1
170 CNUM=CVD(CUSTNO$):N$=NAME$
180 PRINT CNUM,N$,ADDR$
```

FOR...TO...STEP

Function: Performs a specified number of repetitions of the statements between FOR and an ensuing NEXT

Syntax:

```
FOR <variable>=<initial-value> TO
<final-value> [STEP <increment>]
```

Explanation: The variable is used as a counter, and initially is set to <initial-value>. Program execution loops between FOR and the ensuing NEXT, and the counter is incremented by <increment> with each repetition until the counter reaches the value specified in <final-value>. If STEP is omitted, <increment> becomes 1. When <increment> is a positive value and <initial-value> is larger than <final-value>, the statements between FOR and NEXT are executed only once. The same applies when <increment> is a negative value and <initial-value> is smaller than <final-value>.

Note: FOR-NEXT loops can be nested. However, a different variable must be specified for each loop

Example:

```
100 J=10:K=30
110 FOR I=1 TO J STEP 2
120 PRINT I;
130 K=K+10:PRINT K
140 NEXT I
```

GET

Function: Fetches a data record into a random access file buffer from a random access file.Can also be used to fetch data into a random access file buffer from the keyboard or communication file.

Syntax. `GET [#]<file-number>,[<record-number>]`

Explanation: <file-number> must be the same number under which the file was opened. If <record-number> is omitted, the record read is that which follows the one specified by the last executed GET or PUT command

The value specified for <record-number> must be in the range from 1 to 65535. When reading data from the keyboard file or communication file, the record number specifies the number of bytes of data to be read. In this case, 256 is assumed if 0 is specified or if <record-number> is omitted.

The record length of a random access file is 256 bytes.

GOSUB

Function: Calls a subroutine.

Syntax: `GOSUB <line-number>`

Explanation: The GOSUB command calls the sub-routine beginning with the specified <line-number>. When the sub-routine ends with a RETURN command, program execution then resumes with the statement following the GOSUB command.

A sub-routine is an independent part of the program that ends with a RETURN command

Note One sub-routine can also make calls to other sub-routines. The number of levels to which such calls can be made depends on the amount of available stack area in memory. If the stack area is exceeded, an Out of memory error results. If a GOSUB command is executed without a corresponding RETURN command, a RETURN without GOSUB error results. See the BASIC error messages section.

Example:
```
100 PRINT "CALL"
110 GOSUB 140
120 PRINT "RECALL"
130 END
140 PRINT "!!BACK!."
150 RETURN
```

GOTO

Function: Branches execution to a specified line

Syntax:
```
GOTO <line-number>
```

Explanation: This command causes execution to jump to the specified line number. This makes it possible to execute a particular line from anywhere within the program.

Example
```
100 DATA 5,7,9,0
110 READ R:IF R=0 THEN END
120 PRINT "RADIUS:";R;"AREA=";3.14*R^ 2
130 GOTO 110
```

IF...THEN~ELSE

Function: Makes decisions based on evaluation of an expression.

Syntax
```
IF <expression> THEN<statement or line-number>
                |GOTO<line-number>
[ELSE <statement or line-number>]
```

Explanation: This command makes decisions about program execution based on evaluation of an expression. If the expression is TRUE (other than 0), the statement(s) or line number following THEN or GOTO is executed. If the expression is FALSE (0), the statement(s) or line number following ELSE is executed.

INPUT

Function: Inputs data into specified variables.

Syntax:
```
INPUT [<prompt-string> ; ]<variable>
[,<variable>    ]       ,
```

Explanation: The INPUT command causes the program to display the specified prompt string and a question mark, then to pause for input from the keyboard.

<prompt-string> is a string of characters enclosed in double quotation marks, followed by a semicolon or comma and the list of variables into which data is to be input. When a comma is specified following <prompt-string> instead of a semi-colon no question mark is displayed following the prompt string. If the type of data input does not match the corresponding variable type or the number of data items input does not match the number of variables, the message "? Redo from start" is displayed and the INPUT command waits for input to be done over.

Example.
```
100 INPUT "END";XS:IF XS="END" GOTO 130
110 INPUT A:PRINT "^2 =" A^2
120 GOTO 100
130 END
```

INPUT#

Function: Reads data from a file.

Syntax: `INPUT #<file-number> <variable>[,<variable>...]`

Explanation: This command reads data sequentially from a file.

Note: <file-number> must be the number under which a file was opened for sequential input by the OPEN command.

Example:

```
100 OPEN "SMAP.DAT" FOR OUTPUT AS #1
110 INPUT "DATA";INDATA$
120 IF INDATA$ = ""THEN CLOSE : GOTO 150
130 PRINT #1, INDATA$
140 GOTO 110
150 OPEN "SAMP DAT" FOR INPUT AS #2
160 INPUT #2,OUTDATA$
170 IF EOF.2) THEN END
180 GOTO 160
```

KILL

Function: Erases a file.

Syntax: `KILL <filename>`

Explanation: This command erases the specified file. The name specified in <filename> must be complete, including the extension.

Note: It is not possible to directly erase a file that is currently open.

LET

Function: Substitutes the value of an expression into a variable.

Syntax: `[LET] <variable-name> = <expression>`

Explanation: The command word "LET" is omissable. (The equals sign fulfills the command function by itself.) The type of <variable-name> and <expression> must be the same. <expression> can be either a numeric value or string value.

LINE

Function: Draws a line or box.

Syntax:
```
LINE [[STEP](<horiz-coord-1>,<vert-coord-1>)]-
[STEP](<horiz-coord-2>,<vert-coord-2>)
[,<color>][,|B |]
            |BF|
```

Explanation: This command specifies two points on the screen and draws a line between those two points. It can also draw a hollow or solid box around the diagonal specified by such a line.

The first pair of coordinates specify the starting point of the line, and the second pair specifies the ending point. Specify either 0 or 1 as the line color. Specifying 0 erases dots, and specifying 1 draws dots.

B specifies drawing of a hollow box, and BF specifies drawing of a solid box.

LINE INPUT

Function: Reads a 1-line character string from the keyboard.

Syntax:
```
LINE INPUT [<prompt-string>;]<string-variable>
```

Explanation: Reads a continuous string of up to 255 characters from the keyboard. All characters typed between the time the prompt appears and the ↵ key is pressed are stored in <variable>.

LINE INPUT#

Function: Reads a 1-line character string from a sequential file

Syntax: `LINE INPUT #<file-number>,<string-variable>`

Explanation: Reads a maximum of 255 characters from the specified sequential file. Characters are read from the current position in the file up to (but not including) the first carriage return, or up to 255 characters if no carriage return is encountered. Characters read are stored in <string-variable>. <file-number> must be the number of a file that was previously opened for sequential input by the OPEN command.

This command can also be used to read data from a program that has been saved in ASCII format.

Example:

```
100 OPEN "LIST" FOR OUTPUT AS #1
110 LINE INPUT "ADDRS?";C$
120 PRINT #1,C$
130 CLOSE #1
140 OPEN "LIST" FOR INPUT AS #1
150 LINE INPUT #1,C$
160 PRINT C$
170 CLOSE #1
```

LOCATE

Function: Moves the cursor to a specified position.

Syntax: `LOCATE [<vert-coord>] [,<horiz-coord>]`

Explanation: The vertical range of coordinates is 1 to 8, for the 8 lines of the screen, and the horizontal range is 1 to 80 for the screen's 80 columns.

Note: If you specify a value that exceeds the coordinate range, 8 is assumed for <vert-coord> and 80 is assumed for <horiz-coord>

LPRINT, PRINT

Function: Outputs data to the screen or printer.

Syntax:

```
LPRINT [<expression>][ ; | , |<expression>...][ ; | , ][ ; | , ]
PRINT [<expression>][ ; | , |<expression>...][ ; | , ]
```

Explanation: These commands display the values or character strings specified in <expression> on the screen or output them to the printer. If <expression> is omitted, only a carriage return is output. Either commas or semicolons can be used to delimit the expressions. Placing a comma or semicolon after the final expression prevents a carriage return from being performed at the end of the line.

Note: Delimiting commas and semicolons are not necessary if the <expression> parameters consist solely of character strings enclosed in double quotation marks (" "). In this case, the expressions are handled as if they had been delimited with semicolons.

Example: 1)
```
100 A$="123456789" : B$="abcdef"
110 LPRINT A$;B$
120 LPRINT A$;CHR$(10);B$
130 LPRINT A$;CHR$(13);B$
```

2)
```
100 FOR X=1 TO 5
110 J=J+5
120 K=K+10
130 PRINT J;K;
140 NEXT X
```

LPRINT USING, PRINT USING, PRINT # USING

Function: Outputs character strings and numeric values to the printer or display in a specified format.

Syntax:

```
LPRINT USING <format-string>;[<expression>]
[|;|<expression>...][|;|]
 |,|                 |,|

PRINT USING <format-string>;[<expression>]
[|;|<expression>...][|;|]
 |,|                 |,|

PRINT #<file-number>, USING
<format-string>;[<expression>]
[|;|<expression>...][|;|]
 |,|                 |,|
```

Explanation: <format-string> controls the area in which the expressions are printed. <format-string> consists of the following characters.

\# : In <format-string>, a string of '#' characters specifies the field for output of a numeral. If a number consists of fewer numerals than there are '#' signs in <format-string> the number is right jusified within the field.

A period within <format-string> specifies the position of the decimal point.

\+ : A plus sign can be added to the beginning or end of <format-string>. This determines whether the sign of the number, + or -, is appended to the beginning or end of the number.

** : When a number is output, empty positions within the field are ordinarily filled with spaces. However, two asterisks at the beginning of <format-string> indicate that any empty positions within the field are to be padded with asterisks.

, : Placement of a comma to the left of the decimal point indicates that every three digits of the number are to be punctuated with a comma.

^^^^^	Inc uding this string following the numeric field indicates that the number is to be output n exponential format.
_	An underscore mark indicates that the following character is to be output exactly as specified.
!	An exclamation mark indicates that only the first character of the given string variable or character string is to be output.
\n spaces\	n spaces bracketed by reverse slashes indicates that n+2 characters of the given string variable or character string are to be output If the given character string is longer than n+2 characters, the excess characters are gnored. If it is shorter, the string is output left justif ed within the field.
&	An ampersand indicates the position for output of an complete character string. Multiple ampersands indicates that one character string from among the expressions is to be output for each ampersand. If the number of ampersands is greater than the number of character strings in the expressions, the excess are ignored

The maximum .ength of the format string is 25 characters for each character string or expression included as an output parameter. An error results if this hmit is exceeded

Note

If the number of digits making up a number exceeds the specified field length, a percent sign '%' is output affixed to the beginning of the number.

LSET, RSET

Function: Sets data into random access file buffer in preparation for output by the PUT command

Syntax:
```
LSET <string-variable>=<string-expression>
RSET <string-variable>=<string-expression>
```

Explanation: The variable specified in these commands is one that has been defined as a field in the buffer by the FIELD command and the string expression is the data that is to be moved into the buffer LSET left-justifies the data in the field, and RSET right justifies it Excess positions in the field are padded with null characters

MID$

Function: Replaces part of a string variable with another string.

Syntax
```
MID$ (<string-variable>,<numeric-expression-1>
[,<numeric-expression-2>])=<string-expression>
```

Explanation This command replaces <numeric-expression-2> characters of the string in <string variable> with <string-expression>, starting at the character specified by <string expression-1> If <numeric-expression-2> is omitted the number of characters equal to the length of <string-expression> is replaced.

NAME

Function: Changes the name of a file.

Syntax.
```
NAME <old name> AS <new-name>
```

Explanation The file names specified must be complete, including extensions.

NEXT

Function: Closes a FOR...NEXT loop.

Syntax: `NEXT [<variable>][,<variable>...]`

Explanation. If no variable is specified, NEXT applies only to the most recently executed FOR command

ON...GOTO, ON...GOSUB

Function: Branches to one of several line numbers

Syntax:
```
ON <numeric-expression> GOTO
<line-number>[,<line-number>...]

ON <numeric-expression> GOSUB
<line-number>[,<line-number>...]
```

Explanat on The value of the numeric expression determines to which of the severa program lines execution branches With ON GOSUB, each line number listed must be the first line of a sub-routine

OPEN

Function: Opens a file or device for access.

Syntax.
```
OPEN <file-name> [FOR <mode>] AS
 #]<file-number>
```

Explanation: Opens the a dev ce or file for access in the specified mode. Once a device or file has been opened it cannot be opened again until it has been closed.

For <mode>, specify INPUT to input data from a sequen al file, OUTPUT to open a new file for sequential output, APPEND to open an existing sequential file to add additional data. To open a file for random input/output, omit the [FOR <mode>] parameter.

A maximum of four files or devices can be opened by this command at one time. Therefore, specify a number from 1 to 4 for <file-number>.

With a random access file, the maximum record length is 256 bytes.

With this Notebook, six devices can be specified as files. Names to specify and corresponding devices are as follows.

A: Built-in memory	B: Memory card
SCRN: Display	LPT: Printer
COM: RS-232C (serial)	KYBD: Keyboard

Example:

```
100 FILES="LPT:"
110 OPEN FILES AS #1
120 PRINT #1,"WIDTH 80"
```

PRINT

Function: Outputs data to a file.

Syntax:

```
PRINT #<file-number>,[<expression>
[ | ; | <expression>...][ | ; ]
  | , |                  | , ]
```

Explanation: For <file-number>, specify the number of a file that has previously been opened with the OPEN command. Separate expressions (numeric or string) with commas or semicolons

PRESET

Function: Resets a specified dot on the screen.

Syntax:

```
PRESET [STEP] (<horiz-coord>,<vert-coord>)
[,<color>]
```

Explanation: <horiz-coord> must be a numeric value in the range from 0 to 479, and <vert-coord> must be a numeric value in the range from 0 to 63. Using this command, you can erase individual dots from characters or graphics that are currently displayed on the screen.

Specifying any value other than 0 for <color> reverses the function of PRESET, causing it to work in the same manner as the PSET command. Specifying 0 or omitting <color> causes it to erase the dot at the specified position.

STEP, when specified, indicates that the coordinates specified are relative to the most recently specified point. When step is omitted, the coordinates are absolute in relation to the screen origin.

Note: An Illegal function call error results if either <vert-coord> or <horiz-coord> is not within the specified range.

PSET

Function: Sets a specified dot on the screen

Syntax:
```
PSET [STEP] (<horiz-coord>,<vert-coord>)
[,<color>]
```

Explanation: <horiz-coord> must be a numeric value in the range from 0 to 479, and <vert-coord> must be a numeric value in the range from 0 to 63.

Specifying any value other than 0 for <color> reverses the function of PSET, causing it to work in the same manner as the PRESET command. Specifying 0 or omitting <color> causes it to set the dot at the specified position.

STEP, when specified, indicates that the coordinates specified are relative to the most recently specified point. When step is omitted, the coordinates are absolute in relation to the screen origin.

Note: An Illegal function call error results if either <vert-coord> or <horiz-coord> is not within the specified range.

Example:
```
100 FOR I=0 TO 300
110 PSET (I,I/5)
120 NEXT
130 FOR I=300 TO 0 STEP -1
140 PRESET (I,I/5)
150 NEXT
```

PUT

Function: Write a record into a random access file from that file's random access buffer. Can also be used to write to the screen file, printer file, or communications file.

Syntax:
```
PUT [#]<file-number>,[<record-number>]
```

Explanation: In <file-number>, specify the number under which the file was opened. Specify the record number to which the data is to be written as a numeric expression. If <record-number> is omitted, data is written to the record following the one last accessed by PUT or GET.

When writing data to the screen file, printer file, or communications file, specify the record number specifies the number of characters (0-256) to be output. When 0 is specified or the parameter is omitted, 256 is assumed. The record length of a random access file is 256 bytes.

READ

Function: Reads values from a DATA command and substitutes them into variables

Syntax:
```
READ <variable>[,<variable>...]
```

Explanation: READ is used in combination with DATA commands, and each item of data specified by a DATA command is read into one variable by a READ command. Provided that the variable and data types match, data read can be either numeric or string data

Note: A Syntax error occurs if the type of data read does not match the variable type. See the section on error messages.

See also: DATA, RESTORE

Example:
```
100 DATA 100,-50,0,3.1416
110 READ A,B,C,D
120 RESTORE
130 READ R$,S$,T$,U$
140 PRINT A;B;C;D
150 PRINT R$;S$;T$;U$
160 END
```

REM

Function. Designates a program comment

Syntax: `REM [<text of comment>]`

Explanation: REM is a non-executable command that makes it poss ble to include comments in a program without affecting the program's execution. When the program .s listed, the contents of the comment are output verbatim in the list Although colons cannot be used to del.mit the RFM command from following commands on the same line, a RFM command can be included in a line following some other command by preceding i w th a co on

Example.

```
100 REM
110 SUM=0:REM SUM
120 DATA 1,2,3,4,5,6,7,8,9,10
130 FOR I=1 TO 10
140 READ V(I)
150 SUM=SUM+(I)
160 NE>T I
```

RESTORE

Function· Specif.es the line number of a DATA statement that s to be next read (or re-read) by a READ command.

Syntax· `RESTORE [<line-number>]`

Explanation: Sets <.ine-number> as the line to be read by the next READ command If <line-number> is omitted, the line number of the first DATA command in the program is assumed

Example.

```
100 READ A,B,C,D,E,F
110 RESTORE 140
120 READ G,H,I
130 DATA 57,68,79
140 DATA 80,91,102
150 PRINT A;B;C;D;E;F;G;H;I
```

RETURN

Function. Returns execution at the end of a sub-rout ne

Syntax: `RETURN`

Explanation. This command ends subroutine execution returning execution to the first statement following the GOSUB command that called the subroutine. Sub-routines should only be executed through calls made4 by the GOSUB command. Note that the CLEAR command clears the return location from memory, making it mpossible for execution to be returned

See also: CLEAR, GOSUB

SOUND

Function: Outputs a tone from the speaker.

Syntax: `SOUND <frequency>[,<duration>]`

Explanation For <frequency>, specify the desired frequency of the sound in Hz as a number in the range 20 to 20000. For <duration>, specify a number in the range from 1 to 1000. The duration of the sound is equal to <duration> x 10 milliseconds.

STOP

Function: Stops program execution.

Syntax: `STOP`

Explanation: This command can be used to stop program execution at any point. Execution stops at the line containing the STOP command Upon stopping, BASIC outputs the message "Break in XX", where XX is the line number at which execution stopped Program execution can then be resumed by entering CONTINUE Unlike the END command, the STOP command does not close any open files.

Example:

```
100 INPUT A,B
110 TEMP=A*B
120 STOP
130 FINAL=TEMP+200:PRINT FINAL
```

SWAP

Function: Exchanges the values of two variables

Syntax: `SWAP <variable-1>,<variable-2>`

Explanation: This command exchanges the values of two variables. The two variables specified must be of the same type.

Example:

```
100 A$="ONE":B$="ALL":C$=" FOR "
110 PRINT A$ C$ B$
120 SWAP A$,B$
130 PRINT A$ C$ B$
```

WRITE

Function: Writes data to the screen

Syntax:

```
WRITE <expression> [ ;|<expression>...]
                    |,|
```

Explanation: Specify the data to be written to the screen in the expressions (string or numeric). Separate the expressions with commas or semicolons. The difference between WRITE and PRINT is that WRITE writes commas to the screen as delimiters between expressions.

Example:

```
100 A=80:B=90:C$="THAT'S ALL"
110 WRITE A,B,C$
```

WRITE#

Function: Writes data to a sequential file.

Syntax:

```
WRITE #<file-number>,<expression>
  ;|<expression>. .]
  |,|
```

Explanation: For <file-number>, specify the number of a file that has previously been opened for output with the OPEN command. Specify the data to be written to the file in the expressions (string or numeric). Separate the expressions with commas or semicolons. The difference between WRITE # and PRINT # is that WRITE # writes commas to the file as delimiters between expressions.

Functions reference

ABS

Function. Returns the absolute value of a number.

Syntax: `ABS (<numeric-expression>`

Explanation. This function returns the absolute value of <numeric-expression>.

Example
```
100 PRINT ABS(7*(-5))
```

ASC

Function. Returns the ASCII character code of a character.

Syntax: `ASC (<string-expression>)`

Explanation. This function returns the character code of the first character of <string-expression>. See the character code chart for the character codes and corresponding characters.

Note. An Illegal function call error results if <string-expression> is a null string. See the section on error messages.

Example
```
100 Y$="ABC"
110 A=ASC(Y$)
120 B$=CHR$(A)
130 PRINT Y$,A,B$
140 END
```

ATN

Function. Returns the arctangent of an angle.

Syntax `ATN (<numeric-expression>)`

Explanation: This function interprets the value of <numeric-expression> as an angle in radians and returns the arctangent of that angle. The value of the expression must be in the range from $-\pi/2$ to $\pi/2$ (π is taken as 3.14159265358979.)

Note. In order to convert degrees into radians, multiply by 3.14159265358979/180

CHR$

Function: Returns the character corresponding to a specified character code

Syntax: `CHR$ (<numeric-expression>)`

Explanation: This function returns the character corresponding to the character code specified by <numeric-expression>. The value of <numeric-expression> must be in the range 0-255

Note: If <numeric-expression> is a real number, any portion to the right of the decimal point is discarded

Example:
```
100 PRINT CHR$(65),CHR$(97)
```

COS

Function: Returns the cosine of an angle.

Syntax: `COS (<numeric-expression>)`

Explanation: This function interprets the value of <numeric-expression> as an angle in radians and returns the cosine of that angle

Note: In order to convert degrees into radians, multiply by 3.14159265358979/180

Example:
```
100 PI=3.14159265358979
110 PRINT COS(PI)
120 DEGREES=180
130 RADIANS=DEGREES*PI/180
140 PRINT COS(RADIANS)
```

CSRLIN

Function: Returns the screen cursor's vertical position.

Syntax: `CSRLIN`

Explanation: This function returns the number of the row currently containing the cursor. The value returned is in the range 1-8

Example:
```
100 CLS
110 Y=CSRLIN
120 X=POS(0)
130 LOCATE 5,1:PRINT "CURSOR";
140 LOCATE Y,X
```

CVD

Function: Converts a string expression into numeric data.

Syntax: `CVD (<string-expression>)`

Explanation: This function returns the numeric data corresponding to the string representation of a numeric value that has been written into a random access buffer using the MKD$ function. The length of the string expression must be 8 bytes.

Example:
```
100 FIELD #1,4 AS N$,12 AS B$
110 GET #1
120 Y=CVS(N$)
```

DATE$

Function: Returns the date.

Syntax: `DATE$`

Explanation: This function returns the date in mm-dd-yyyy format, where mm is the month, dd is the day, and yyyy is the year

See also: TIME$

Example:
```
100 PRINT DATE$
```

EOF

Function. Checks for the end of file condition.

Syntax: `EOF ([#]<file-number>)`

Explanation: This function checks whether or not the end of the specified file has been reached. <file-number> is the number of a file that has been opened for sequential input. This function returns -1 (TRUE) if the end of the file has been reached, or 0 (FALSE) if it has not been reached. -1 is returned if the file is empty

See also: OPEN

Example:
```
100 OPEN "DATA" FOR INPUT AS #1
110 C=0:DIM M(100)
120 IF EOF(1) THEN END
130 INPUT #1,M(C)
140 C=C+1:GOTO 120
```

EXP

Function. Returns the value of the natural logarithm e raised to a specified power.

Syntax: `EXP (<numeric-expression>)`

Explanation: The value specified for <numeric-expression> must be less than or equal to 709.782712893384.

Note. An Overflow error results if the value is out of the permitted range. See the section on error messages.

Example
```
100 X=2
110 PRINT EXP(X-1
```

FIX

Function	Truncates the fractional portion of a number and returns the integer portion
Syntax:	`FIX (<numeric-expression>)`
Explanation:	This function discards the portion of a real number to the right of the decimal point and returns an integer.
Example:	`100 PRINT FIX 12.34)`

FRE

Function	Returns the number of bytes of unused memory in the usable memory area.
Syntax:	`FRE (<numeric-expression>)`
Explanation.	Specify either 0 or 1 in <numeric-expression> When 0 is specified, the function returns the number of unused bytes in the area used for simple variables and character strings. Any unneeded character string data in memory is discarded before checking the amount of unused memory. This process may take a few moments. When 1 is specified, the function returns the number of unused bytes in the area used for storing array variables.
Example	`100 PRINT FRE (0)`

HEX$

Function. Returns a string representation of the hexadecimal equivalent of a decimal number

Syntax: `HEX$ (<numeric-expression>)`

Explanation. The value specified for <numeric-expression> must be in the range -3278 to 65535. If the value is negative, the result is returned as a two's complement.

Note. An Overflow error results if the value is out of the permitted range. See the section on error messages.

Example.
```
100 INPUT X
110 A$=HEX$ X)
120 PRINT "10" X "16" A$
```

INKEY$

Function: Reads a character from the keyboard

Syntax: `INKEY$`

Explanation: If no key input is present, this function returns a null string. Otherwise, this function returns the the first character from the key input buffer. The SHIFT key and other keys that do not correspond to a character in the character set are ignored.

Example
```
100 PRINT "KEYBOARD DATA"
110 A$=INKEY$:IF A$"" THEN 100
```

INPUT$

Function: Reads a specified number of characters from a file.

Syntax:
```
INPUT$ (<number-of-characters>
[,[#]<file-number>])
```

Explanation. This function reads a string of characters of the length specified by <number-of-characters> from the file opened under <file-number>. Unlike the INPUT statement, this function does not display characters input on the screen. If <file-number> is omitted, characters are input from the keyboard.

See also. INPUT, OPEN

Example:
```
100 OPEN "DATA" FOR INPUT AS #1
110 IF EOF(1) THEN 140
120 PRINT HEX$(ASC(INPUT$(1,#1)));
130 GOTO 110
140 PRINT
150 END
```

INSTR

Function: Searches a string for a sub-string and returns the position of the sub-string

Syntax: `INSTR ([<position>],<string-expression-1>, <string-expression-2>)`

Explanation: This function searches for <string-expression-2> in <string-expression-1> and returns a value indicating the position in which it is found. 0 is returned if the string is not found.

<position> indicates the position at which the function is to begin searching for the string, and is specified as an integer in the range 1 to 255.

Example
```
100 A$="ABCDEFG":B$="B"
110 PRINT INSTR(A$,B$);INSTR(4,A$,B$)
```

INT

Function: Converts a number to an integer by discarding digits to the right of the decimal point.

Syntax: `INT (<numeric-expression>)`

Explanation: This function returns the largest integer that does not exceed the specified value.

See also: FIX

Example:
```
100 PRINT INT(12.34,
```

LEFT$

Function. Returns a sub-string consisting of the specified number of characters from the left end of a string

Syntax: `LEFT$ (<character-string>,<numeric-expression>)`

Explanation: Specify a number in the range 0-255 for <numeric-expression>. The entire string is returned if the number specified exceeds the number of characters in the string. A null string is returned if <numeric-expression> is 0.

See also: RIGHT$, MID$

Example:
```
100 A$="BASIC PROGRAM"
110 PRINT LEFT$(A$,5
120 PRINT A$
```

LEN

Function: Returns the length of a string

Syntax: `LEN (<string-expression>)`

Explanation: The value returned by this function includes non-printing characters such as screen control codes and spaces. See the character set chart for the non-printing characters

Example.
```
100 A$="6th JUNE"
110 PRINT LEN A$)
```

LOC

Function: Returns the current position inside a file.

Syntax: `LOC ([#]<file number>)`

Explanation: With a sequential file, this function returns the byte-wise position of the next position to be accessed within the file. With a random access file, it returns the record number following that of the record last accessed. With the keyboard and communications files, it returns the number of bytes of data contained in the input buffer.

Example:
```
100 OPEN "DATA" FOR INPUT AS #1
110 IF LOC(1)>50 THEN END
120 PRINT INPUT$(1 1);
130 GOTO 110
```

LOF

Function: Returns the length of a file in bytes.

Syntax: `LOF ([#]<file-number>)`

Explanation. With a sequential file, this function returns the length of the file in bytes. With a random access file, it returns the number of the highest record in the file. With the keyboard and communications files, it returns the number of bytes of available space in the input buffer.

Example.
```
100 OPEN "BIG" AS #1
110 GET #1,LOF(1)
```

LOG

Function Returns the natural logarithm (the logarithm to the base e) of a numeric value.

Syntax `LOG (<numeric-expression>)`

Explanation. The value specified for <numeric-expression> must be a positive real number. The function returns the natural logarithm of the number.

LPOS

Function. Returns the position of the printer's print head

Syntax: `LPOS (<numeric-expression>)`

Explanation: This function returns the position of the print head in the print buffer. The value returned reflects only the position within the print buffer, and not the physical position of the print head

Example
```
100 IF LPOS(0)>60 THEN LPRINT CHR$(13);
```

MID$

Function: This function returns a sub-string of arbitrary length from a specified position within the string specified as the parameter

Syntax:
```
MID$
(<string-expression>,<numeric-expression-1>
[,<numeric-expression-2>])
```

Explanation: The function returns the number of characters specified by <numeric-expression-2>, starting at the position within the string expression that is specified by <numeric-expression-1>. The value specified for <numeric-expression-1> must be in the range 1 to 255, and that specified for <numeric-expression-2> must be in the range 0 to 255.

Note: The entire right end of the string is returned if <numeric-expression-2> is omitted, or if the number of characters to the right of the position specified by <numeric-expression-1) is less than the value specified by <numeric-expression-2>.

A null string is returned if the number of characters in the character string is less than the number specified by <numeric-expression-1>.

See also: LEFT$, RIGHT$

Example:
```
100 A$="LA CA USA"
110 B$=MID$(A$,4,2)
120 PRINT B$
```

MKD$

Function: Converts numeric data to a character string

Converts a numeric value to a string of numeric characters for storage in a FIELD variable

Syntax:
```
MKD$ (<numeric-expression>)
```

Explanation: This function is used when moving numeric values into a random access file buffer. This makes it possible to put a number into the file buffer without destroying its type

See also: CVD

Example.
```
100 OPEN "RANDOM" AS #1
110 FIELD #1,4 AS D$,20 AS N$
120 LSET D$=MKD$(AMT)
130 LSET N$=A$
140 PUT #1
```

POINT

Function: This function returns the color of the dot at the specified screen coord na.es.

Syntax: `POINT (<horiz-coord>,<vert-coord>)`

Explanation: Specify the vertical and horizontal screen coordinates.

Example:
```
100 PSET(I,I) 1-POINT(I,I)
```

POS

Function: Returns the number of the column containing the cursor.

Syntax:
```
POS (<numeric-expression>)
```

Explanation: <numeric-expression> may be either a variable or a constant. The value returned indicates the current horizontal position of the cursor.

See also: CSRLIN

Example:
```
100 IF POS(0)>60 THEN PRINT CHR$(13)
```

RIGHT$

Function: Returns a sub-string consisting of the specified number of characters from the right end of a string

Syntax
```
RIGHT$
(<character-string>,<numeric-expression>)
```

Explanation. Specify a number in the range 0-255 for <numeric-expression> The entire string is returned if the number specified exceeds the number of characters in the string A null string is returned if <numeric expression> is 0

See also LEFT$, MID$

Example:
```
100 A$="BARCELONA SPAIN"
110 PRINT RIGHT$(A$,11)
```

RND

Function. Generates a random number between 0 and 1.

Syntax: `RND [(<numeric-expression>)]`

Explanation: If <numeric-expression> is a positive number, this function generates the next random number in the sequence. If <numeric-expression> is 0, the value returned is the same as that of the last previously generated random number. If <numeric-expression> is a negative number, a new random number sequence is initiated using the negative number as its seed.

The value specified for <numeric-expression> must be in the range -65536 to 65536

Note The random value returned is a real number greater than 0 and less than 1.

Example:
```
100 FOR I=1 TO 3
110 PRINT RND(I);
120 NEXT I
130 PRINT:X=RND(-6
140 FOR I=1 TO 3
150 PRINT RND(I);
160 NEXT I
170 PRINT:X=RND(-6
180 FOR I=1 TO 3
190 PRINT RND;
200 NEXT I
210 PRINT PRINT RND(0)
```

SGN

Function Returns the sign of a number.

Syntax: `SGN (<numeric-expression>)`

Explanation This function returns -1 if <numeric-expression> is negative, 1 if it is positive, and 0 if it is 0.

SIN

Function. Returns the sine of an angle

Syntax: `SIN (<numeric-expression>)`

Explanation: This function interprets the value of <numeric-expression> as an angle in radians and returns the sine of that angle.

Note: In order to convert degrees into radians, multiply by 3.14159265358979/180

See also: ATN COS TAN

Example:

```
100 PI=3.14159265358979
110 DEGREES=90
120 RADIANS=DEGREES*PI/180
130 PRINT SIN(RADIANS)
```

SPACE$

Function: Returns the specified number of space characters.

Syntax: `SPACE$ (<numeric-expression>)`

Explanation: This function returns a continuous string of the number of spaces specified by <numeric-expression>. The value of <numeric-expression> must be in the range 0-255.

See also: TAB

Example:

```
100 FOR I=1 TO 5
110 X$=SPACE$(I)
120 PRINT X$,I
130 NEXT I
```

SPC

Function: Outputs the specified number of space characters.

Syntax: `SPC (<numeric-expression>)`

Explanation: This function outputs the specified number of space characters to the screen or printer. It can only be used in conjunction with output commands such as PRINT and LPRINT.

See also PRINT, LPRINT

Example:
```
100 PRINT "OVER"SPC(15) "THERE"
```

SQR

Function: Returns the square root of a number.

Syntax:
```
SQR (<numeric-expression>)
```

Explanation: This function returns the square root of <numeric-expression>, which must be a value greater than or equal to 0

Example:
```
100 FOR X=10 TO 25 STEP 5
110 PRINT X SQR(X)
120 NEXT
```

STR$

Function: Converts a numeric expression into a character string

Syntax:
```
STR$ (<numeric-expression>)
```

Explanation: This function converts the value specified by <numeric-expression> into a string representation of that number.

Example:
```
100 PRINT STR$(321);LEN(STR$(321))
```

STRING$

Function: Returns a string consisting of the specified number of a certain character

Syntax:
```
STRING$
(<numeric-expression-1>, <string-expression>
                         <numeric-expression-2>)
```

Explanation: This function returns a string of <numeric-expression-1> characters of the character whose code is specified by <numeric expression-2> or the first character of <string expression>. Values of 0 to 255 can be specified for the numeric expressions.

See also: STR$

Example:
```
100 X$="ABCD"
110 Y$=STRING$(10,X$)
120 PRINT Y$
```

TAB

Function: Outputs spaces to advance the cursor to a specified position within the current row.

Syntax: `TAB (<numeric-expression>)`

Explanation: This function outputs the number of spaces required to advance the cursor from its current position to the specified column number in the current row. The value specified for <numeric-expression> must be in the range 0 to 255.

Example
```
100 PRINT " CITY " TAB(30) " TEL "
110 READ A$,B$
120 PRINT A$ TAB(30) B$
130 DATA "OTTAWA","82 7883"
```

TAN

Function: Returns the tangent of an angle

Syntax: `TAN (<numeric-expression>)`

Explanation: This function interprets the value of <numeric-expression> as an angle in radians and returns the sine of that angle.

Note: In order to convert degrees into radians multiply by 3.14159265358979/.80.

See also: COS, SIN

Example
```
100 PI=3.14159265358979
110 DEGREES=45
120 PRINT TAN(DEGREES*PI/180)
```

TIME$

Function: Returns the time of the system clock.

Syntax: `TIME$`

Explanation: This function returns the time in hh:mm.ss format, where hh is the hour, mm is the minute, and ss is the second

See also: DATE$

Example:

```
100 CLS
110 LOCATE 4,36
120 PRINT TIME$
130 GOTO 110
```

VAL

Function: Returns the numeric value corresponding to a string representation of a number.

Syntax: `VAL (<string-expression>)`

Explanation: This function returns 0 if the first character of <string-expression> is not a numeral or one of the following symbols:

+ - . &

If any characters other than numerals are encountered after the first character, that character and all following it are ignored The same applies to spaces and tabs included in the string

See also: STR$, CHR$

Screen control commands

BEL

Function: Outputs a tone.

Syntax: `CHR$ (7) or CHR$ (&H07)`

Explanation: Outputs an 800-Hz tone with a duration of 0.25 second from the speaker.

BS

Function: Moves the cursor one column to the left.

Syntax: `CHR$ (8) or CHR$ (&H08`

Explanation: Moves the cursor one column to the left. If the cursor is at the leftmost column, it moves to the rightmost column in the preceding row.

HT

Function: Outputs a horizontal tab.

Syntax: `CHR$ (9) or CHR$ (&H09)`

Explanation: Moves the cursor to the next tab position. Tab positions are located at every eighth column.

LF

Function: Makes a line feed.

Syntax: `CHR$ (10) or CHR$ (&H0A)`

Explanation: Moves the cursor downward one line in the same column. If the cursor is at the bottom line, also scrolls the screen upward.

VT

Function: Moves the cursor one line upward.

Syntax: `CHR$ (11) or CHR$ (&H0B)`

Explanation: Moves the cursor one line upward in the same column

FF

Function: Moves the cursor one character to the right.

Syntax `CHR$ (12) or CHR$ (&H0C)`

Explanation. Moves the cursor one character to the right. If the cursor is in the rightmost column, moves it to the leftmost column in the next row down. If the cursor is in the rightmost column of the last row, scrolls the screen upward one line and moves the cursor to the leftmost column.

CR

Function. Moves the cursor to the leftmost column in the row

Syntax: `CHR$ (13) or CHR$ (&H0D)`

Explanation: Moves the cursor to the leftmost column in the row

SUB

Function Clears the screen.

Syntax: `CHR$ (26) or CHR$ (&H1A)`

Explanation: Clears the entire screen and moves the cursor to the home position.

ESC

Function: Escape command word.

Syntax: `CHR$ (27) or CHR$ &H1B.`

Explanation. Used in combination with other characters in screen control commands

RS

Function: Moves the cursor to the home position.

Syntax: `CHR$ (30) or CHR$ (&H1E)`

Explanation: Moves the cursor to the home position (row 1, column 1)

CUP

Function. Moves the cursor to the specified position.

Syntax: `ESC + [ <numeric-value-1> ; <numeric-value-2> H`

Explanation: The first numeric value specifies the row number to which the cursor is to be moved, and the second one specifies the column number. Values specified must be greater than 0. If omitted, the cursor moves to the home position (1,1)

HVP

Function: Moves the cursor to the specified horizontal/vertical position

Syntax: `ESC + [ <numeric-value-1> ; <numeric-value-2> f`

Explanation: The first numeric value specifies the row number to which the cursor is to be moved, and the second one specifies the column number. Values specified must be greater than 0. If omitted, the cursor moves to the home position (1,1).

CUU

Function: Moves the cursor upward by the specified number of rows.

Syntax: `ESC + [ <numeric value> A`

Explanation: The numeric value specifies the number of rows that the cursor is to be moved. The cursor moves upward within the same column. If no numeric value is specified, or if 0 or 1 is specified, the cursor moves upward by one row.

CUD

Function. Moves the cursor downward by the specified number of rows.

Syntax: `ESC + [ <numeric-value> B`

Explanation. The numeric value specifies the number of rows that the cursor is to be moved. The cursor moves downward within the same column. If no numeric value is specified, or if 0 or 1 is specified, the cursor moves downward by one row.

CUF

Function Moves the cursor to the right by the specified number of columns

Syntax. `ESC + [ <numeric-value> C`

Explanation: The numeric value specifies the number of columns that the cursor is to be moved. The cursor moves to the right within the same row. If no numeric value is specified, or if 0 or 1 is specified, the cursor moves one column to the right.

CUB

Function. Moves the cursor to the left by the specified number of columns

Syntax: `ESC + [ <numeric-value> D`

Explanation The numeric value specifies the number of columns that the cursor is to be moved. The cursor moves to the left within the same row. If no numeric value is specified, or if 0 or 1 is specified, the cursor moves one column to the left.

PSCP

Function: Stores the current position of the cursor

Syntax: `ESC + [ s`

Explanation: This command stores the current cursor position. The cursor can be restored to the stored position with the PRCP command.

PRCP

Function: Restores the cursor to the stored position.

Syntax: `ESC + [ u`

Explanation: This command restores the cursor to the position stored with the PSCP command.

ED

Function: Erases a specified portion of the row containing the cursor.

Syntax: `ESC + [ <numeric-value> J`

Explanation: The numeric value determines the portion of the screen erased in relation to the cursor as follows:

0 : The screen following the cursor is erased and the position of the cursor remains unchanged.

1 : The The screen from the home position to the cursor is erased and the cursor moves to the home position.

2 : The entire screen is erased and the cursor moves to the home position.

The value 0 is assumed if <numeric-value> is omitted.

EL

Function: Erases the line containing the cursor.

Syntax: `ESC + [ <numeric-value> K`

Explanation: The numeric value determines the portion of the screen erased in relation to the cursor as follows:

0 : The part of the row following the cursor is erased and the position of the cursor remains unchanged.

1 : The part of the row to the left of the cursor is erased, and the cursor moves to the beginning of the row.

2 : The entire row is erased and the cursor moves to the home position.

The value 0 is assumed if <numeric-value> is omitted.

IL

Function: Inserts one or more lines above the line containing the cursor.

Syntax: `ESC + [ <numeric-value> L`

Explanation: The numeric value specifies the number of lines to be inserted. The lines are inserted immediately above the line containing the cursor, and the cursor moves to the beginning of the top inserted line.

DL

Function: Deletes the specified number of lines starting with the line containing the cursor.

Syntax: `ESC + [ <numeric-value> M`

Explanation: The numeric value specifies the number of lines to be deleted. Lines are deleted starting with the line containing the cursor. The the cursor moves to the beginning of the line following the last one deleted.

SGR

Function. Sets the display attributes.

Syntax. `ESC + [ <numeric-value> ; <numeric-value> ; ... m`

Explanation: Screen display can be changed by specifying one of the following numeric values. The value 0 is assumed if no numeric value is specified

Numeric value	Function
0	Resets display attributes to the initial state
1	Sets the bold attribute
4	Sets the underline attribute.
7	Sets the reverse attribute
8	Sets the invisible attribute

SM

Function: Hides the cursor.

Syntax `ESC + [ > 5 h`

Explanation: This command hides the cursor. To make the cursor visible again, use the RM command.

RM

Function. Redisplays the cursor.

Syntax `ESC + [ > 5 l`

Explanation: This command makes the cursor reappear. It has no effect if the cursor is already visible.

APPENDIX

Error Messages

	See "Ma ntaining the Built-in Memory and the Card Memory" in the "Store Memory Operations" chapter.
Card is write-protected.	The card memory you are using is write-protected. Remove the write protection or use another card memory.
Directory is full of files.	You attempted to store text when the built-in memory or card memory already has 64 files. Delete any unnecessary file on that store memory to make room for more, use the other store memory, or use another card memory.
File is not found	You attempted to recall, delete or rename a file that is not found in the built-in memory or on the card memory. Select the proper store memory which contains the file you want.
nadequate COPY/MOVE memory	See "Copying a Text Block" or Moving a Text Block" in the "Editing Functions" chapter
Inadequate store memory space.	You attempted to store more text than will fit in the available store memory space on the bu lt-in memory or the card memory. Delete any unnecessary files on that store memory to make room for the text, use the other store memory, or use another card memory.

Inadequate work memory.	See "Copying a Text Block" or "Moving a Text Block" in the "Editing Functions" chapter.
No card is in the slot.	There is no card memory in the card memory slot. Insert a card memory into the slot.
No text to print.	You attempted to print when there is no text in the work memory. Recall a file from the built-in memory or the card memory, or type new text before printing.
Remaining work memory is inadequate.	You attempted to recall a file from the built-in memory or the card memory when there is already text in the work memory and the remaining work memory is inadequate for the file. Store the current text in the work memory to the built-in memory or to the card memory, and/or clear the work memory. Then recall a file.
Store memory read error.	The card memory has not been initialized yet, or there is something wrong on the card memory or in built-in memory. Use a properly initialized card memory.
Work memory is full	See "Work Memory Full" in the "Basic Operations in Work Memory" chapter.
File is not text	The file you tried to recall is not a text file. Select a different file in built-in memory or card memory and try again.

Character Set

Index

Quick Reference

Note: These functions are used in the Edit Text screen.

TYPING FUNCTIONS

CTRL + 7 (INDENT)	Sets indention.
CTRL + 8 (IND CLR)	Clears indention.
CTRL + C (CENTER or CENTRE)	Centers text between margin.
CTRL + R (R-FLUSH)	Aligns text at right margin.
CTRL + INS (AUTO RET)	Turns on/off auto return.
CTRL + X (XXX)	Underlines text.
CTRL + B (BOLD)	Makes character boldface.
CTRL + - (OVERLAY)	Overstrikes one character on another.
CTRL + TAB (DEC TAB)	Moves cursor to next tab, making it a decimal tab.
CTRL + Z (EXPAND)	Sets expanded typing.
CTRL + V (VERTICAL)	Type vertical line.
CTRL + E (P END)	Ends a page.
CTRL + H (SYL HYP)	Enters a syllable hyphen.
CTRL + G (REQ HYP)	Enters a required hyphen.
CTRL + 4 (P PRINT)	Prints a single page.
CTRL + O (ZOOM)	Displays zoom image of a page.
CTRL + 9 (FRAMING)	Draws lines for framing.
CAPS	Enables typing with only alphabetical keys capitalized.
CTRL + Q (SUPER)	Types superscript.

CTRL + W (SUB)	Types subscript.

EDITING FUNCTIONS

ALT + 9 (REFORM)	Reformats a paragraph.
ALT + 0 (JUSTIFY)	Justifies a paragraph between margins.
ALT + 1 (MARK)	Marks a block of text.
ALT + 2 (COPY)	Copies a block.
ALT + 3 (MOVE)	Moves a block.
ALT + 4 (DELETE)	Deletes a block.
CTRL + S (SEARCH)	Searches for a word.
→ CTRL + A (NEXT)	Searches for a next occurrence of word.
CTRL + D → ↵ (REPLACE)	Replaces a word.
→ CTRL + A (NEXT)	Replaces a single word.
CTRL + BACK (UNDEL)	Retrieves deleted character, word, line, or block.

SPELL CHECK, GRAMMAR CHECK, THESAURUS

ALT + 5 (SPELL TXT)	Checks spelling/grammar throughout text.
ALT + 6 (SPELL WD)	Checks spelling as you type a word.
ALT + 7 (DICT)	Uses dictionaries for suggested words or to add word to dictionary.
ALT + 8 (THES)	Activates thesaurus.